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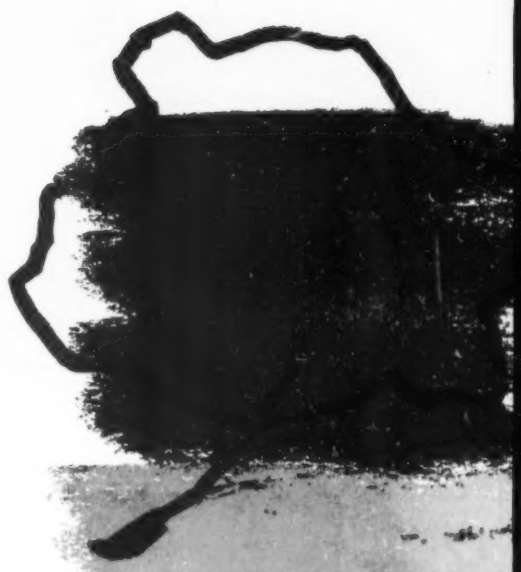
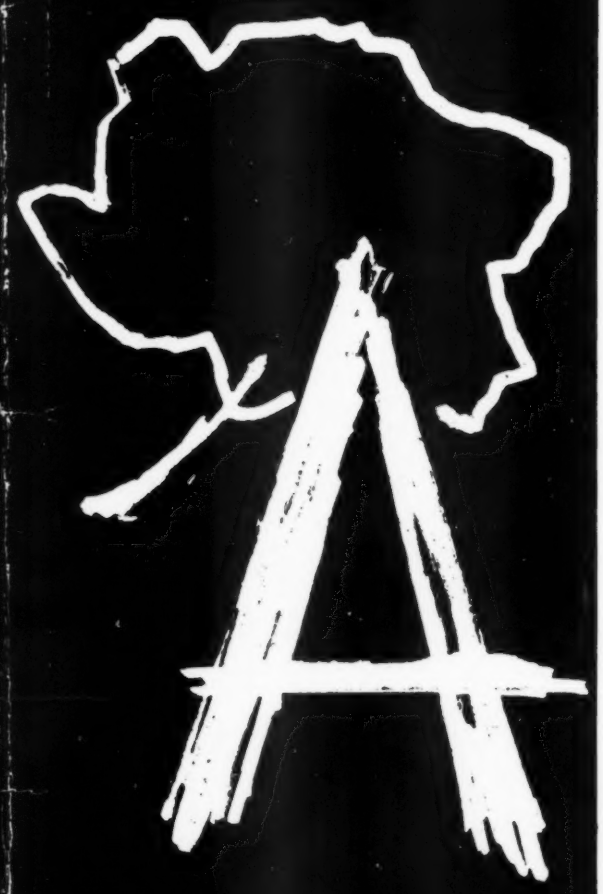
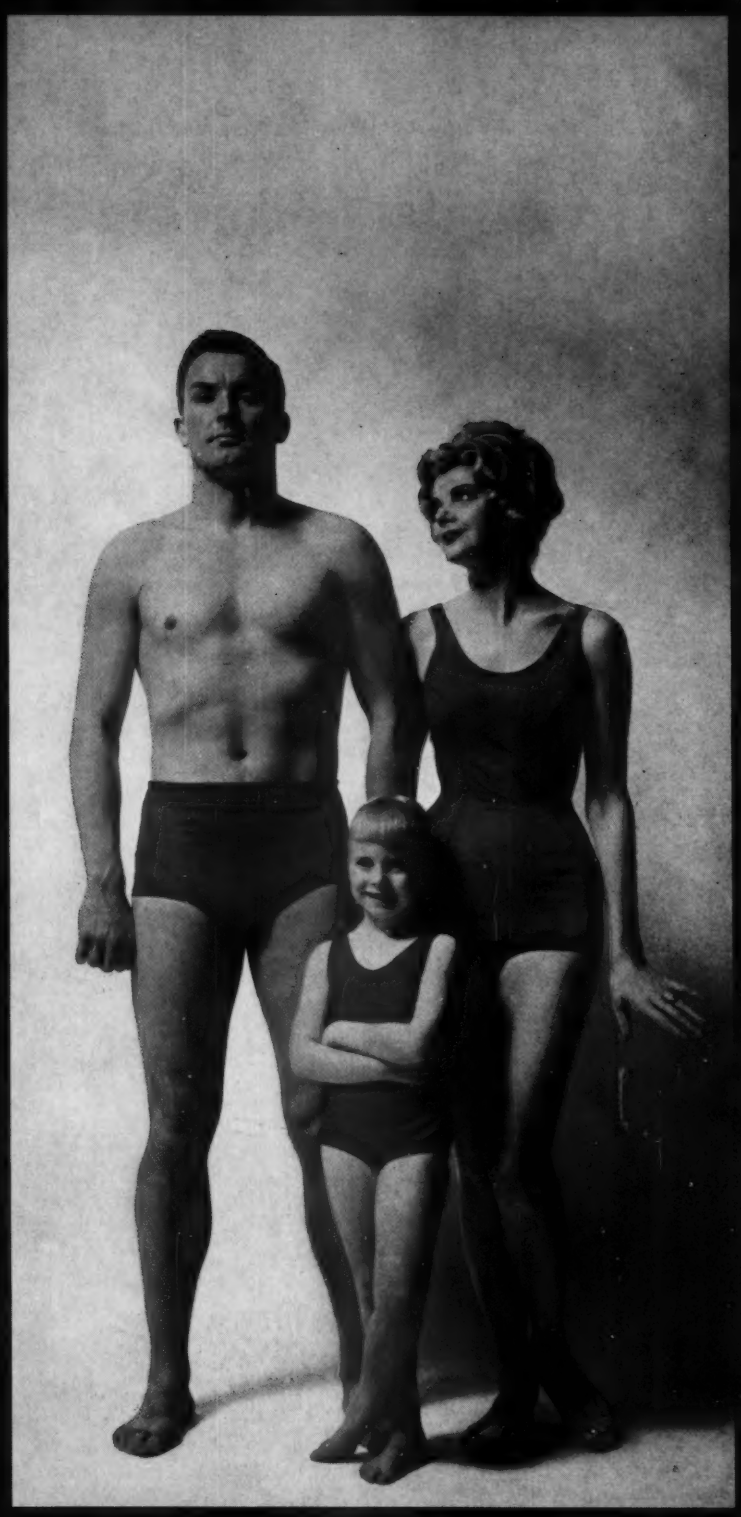




AMERICAN FABRICS



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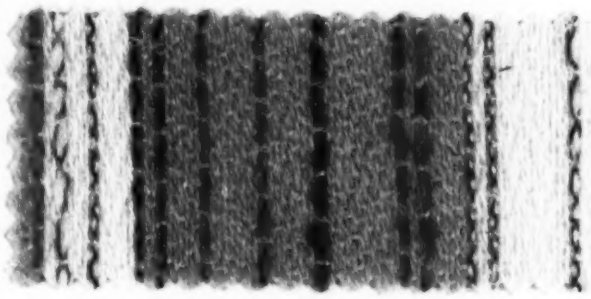
DIRECTIONS

On the following pages American Fabrics presents important fabric and color directions which mean profitable extra business in the fields of fashion and home furnishings. These directional pointers chart a course for the coming seasons.

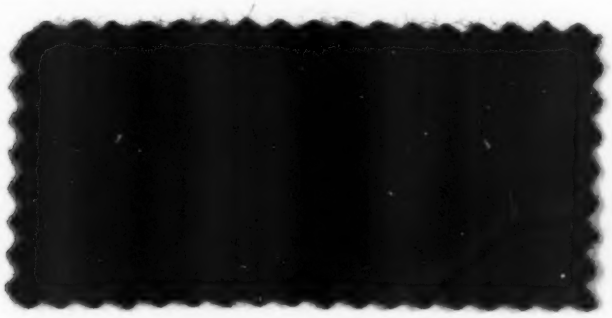


FABRIC BY LAWFORD FABRICS

DIRECTION NUMBER 1: ***New Yarns Create New Textures***

The fruits of revolutionary techniques in the use of yarns are being seen more and more. Blends of different types of yarn and new processing of yarns have added new zest to every branch of the textile industry. An example of a novelty fabric is illustrated. It contains Belgian yarns in the warp and worsted yarns in the filling. Charcoal black nubs (called charnubs) pick up and accent the soft colors, adding an extra fillip to the fabric. The colorings for this suiting and skirt fabric are coordinated with sweater colors.

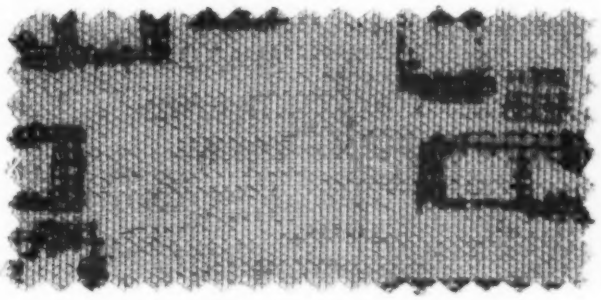
ON THE HORIZON: *Continuing importance of non-exaggerated slub textures . . . the dry hand . . . lightweight construction such as light, airy effects in tweed . . . looser weaves . . . crepes in silk, wool and man-made fibers . . . prints on twill and shantung grounds . . . more emphasis than ever on color and new color harmonies.* *(See page 7.)*



FABRIC BY FORSTMANN INC.

DIRECTION NUMBER 2: ***Crew Cut Fleeces with Subtle Elegance are Rich but Restrained***

Continuing the move away from the exaggerated, curly-cued, loop fabrics, the newer fleeces are actually undergoing crew cuts. The crew cut fleeces feature a comparatively close cropped surface which has both a new and subtle appearance quite different from the old fleeces. With the trend towards "restraint with richness," these fabrics are particularly effective with fur trimmings, adding a pleasant contrasting note to the fur itself. The example shown is made of alpaca and virgin wool with a rich lustre and a smooth, soft hand.



FABRIC BY CONE MILLS

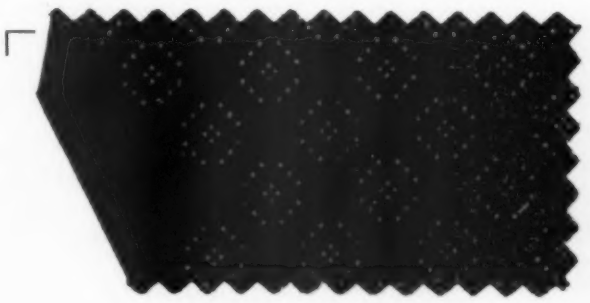
DIRECTION NUMBER 3: ***The "Greige" Look***

Because we live in a machine civilization, there is an inevitable hunger for things that have a hand-crafted look. There is no denying the popularity of the uneven, unprecise texture and pattern in many of our best-selling textiles. In line with this trend, the appearance of a greige goods finish in fabrics is a direction which cannot be ignored. It bears watching. Designers who are alert to suburban tastes agree that this look has a growing market. Cone Mills has produced an extremely interesting group of fabrics which highlight this greige goods feeling in a blend of cotton and flax. It is a happy combination. An example of this fabric, with a corresponding informal print, is swatched here.

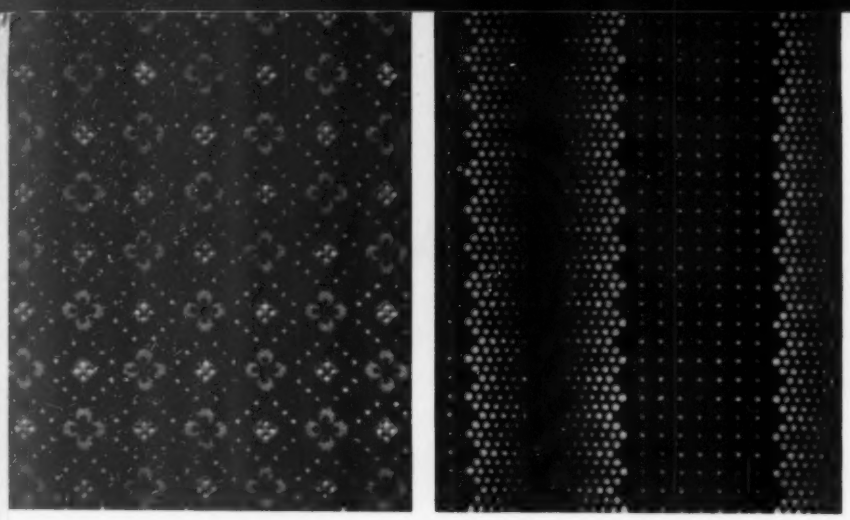
DIRECTION NUMBER 4: ***French Peasant Influence — The Degravé Look***

Astute analysts of the fashion world have always recognized that enduring fashion trends most frequently spring from the native handicrafts of the world's long established cultures. Corduroy, denim, native prints, homespun sailcloths are all basic functional fabrics which we have derived from such sources.

A new contender in this field has just been developed by Fuller Fabrics and we believe it has great potential. Generation after generation of French peasants have worn what is known as degravé cloth. This is a sturdy polished cotton in French peasant colors and motifs. It is a fabric which smacks of nature and the good earth and it has the thrifty look we associate with the hard-working peasants of France. Fuller's flair for handling cottons is well-known and is being put to good use in this interpretation of the



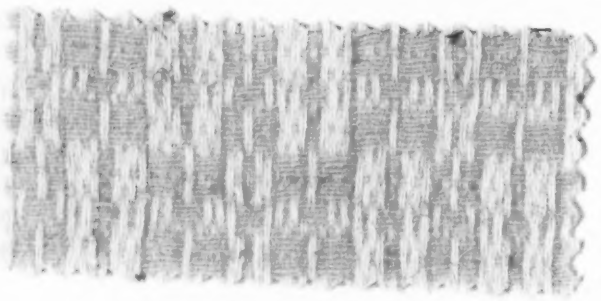
FABRIC BY FULLER



Above. Two more patterns in Fuller's degravé cloth.

DIRECTIONS (continued)

very new – very old degravé cotton. Fuller is introducing the fabric with an Everglaze Minicare finish and it should have wide acceptance for sportswear and separates.



FABRIC BY WOOLMARK CORP.

DIRECTION NUMBER 5: *The Scandinavian Look Is a Growing Influence on High Fashion Woolens*

In the No. 47 issue of American Fabrics, we predicted the advent of the Scandinavian look in high-fashion woolens. The Scandinavian look involves a type of design which derives from Norwegian and Swedish folk crafts, especially the knitted articles used for skiing and skating in the fjord areas of these Northlands. You will see this influence grow in both woven and knitted fabrics. It has the right look for suits, coats, sweaters and separates. The novelty woolen shown was inspired by a Swedish provincial pattern called "Monk's Belt."

FABRIC BY HOCKANUM

DIRECTION NUMBER 7: *Eye Depth in Colorful Tweeds*

There is always a segment of the population which craves colorful and distinctive fabrics and the new hobble nail tweeds employ color precisely in this direction. While the weave and overall effect is one of "gentry-folk" restraint, there is plenty of rich color in these tweeds and it is handled with harmony and good taste. An excellent example of these dimensional tweeds is shown here.

DIRECTION NUMBER 8: *"Tous Les Gris"*

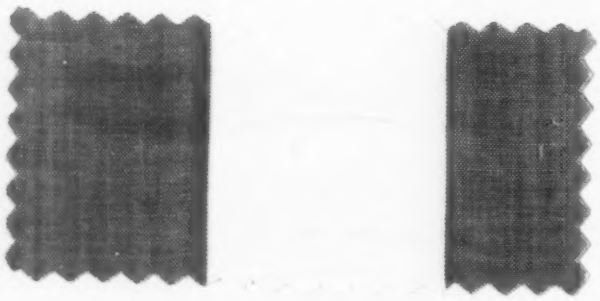
Still very much in the high fashion stage is the strong leaning towards greys of all shades. Paris is particularly bullish on greys and uses this color in a wide range of tones and nuances. The grey-blues and the grey-browns are particularly important. They connote a couture look which is unmistakable and which should be carefully watched as the weather vane of a coming fashion trend.

DIRECTION NUMBER 9: *Printed Silk Knits Are Coming*

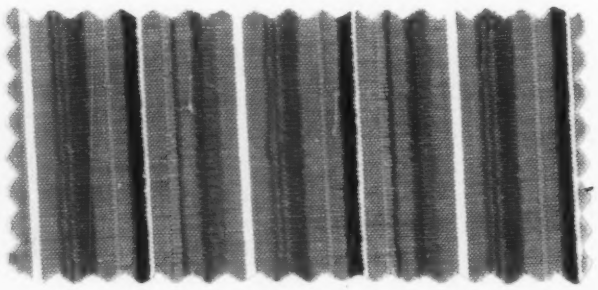
The strong upsurge of silk popularity is unmistakable. Silk is beginning to move in many new directions and in many new fields. The demand for silk knits grows stronger and in this direction particular attention should be given to printed silk tricot. At this writing these printed silk knits are largely a European development but they should be watched carefully since they are bound to appear on the American market and their acceptance in Europe suggests that they may well become an important U.S. fashion trend in the coming seasons.

DIRECTION NUMBER 6: *Traditional Fabrics with a New Look for Extra Fashion Excitement*

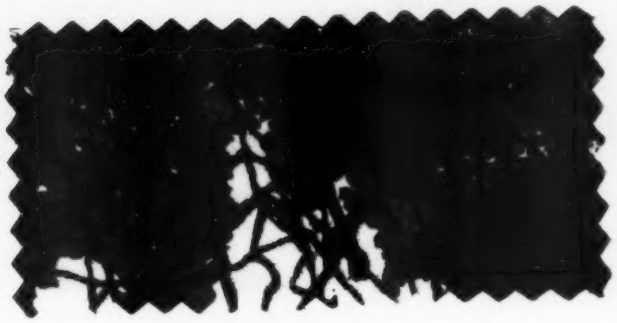
Old standbys such as seersucker, chambray, piqué, etc., are getting a new facial which should bring extra excitement and appeal to these old friends. The performance qualities of these time-tested favorites have never been questioned and now an extra and special look of newness has been added to give them a contemporary feeling. They should have interest for designers on the look-out for fabric inspiration. Two such fabrics are swatched here. One is a seersucker; the other a chambray – each with a new face. One is Avondale's ribbon seersucker in combed cotton. The other is Reeves Bros. pleated stripe on a chambray background.



FABRIC BY REEVES BROS.



FABRIC BY AVONDALE



FABRIC BY JOYCE

DIRECTION NUMBER 10: ***The Silky Look Is an Important Trend in All Fabrics and All Fibers***

You see it in cotton and you see it in man-mades – *the silky look.* One of the most important developments in this area is Du Pont's new Dacron – Type 62. It is a monofilament carefully engineered to provide a silk hand and a dyeability close to that of silk itself. Used in surahs, crepes, taffetas and similar constructions, it enjoys all the properties of Dacron. It is wash-wear, wrinkle-resistant and resistant to abrasion. An excellent example of the new Type 62 is the fabric swatched here. It was designed for the dress trade and it reveals the new fiber's ability to take clear bright print colors in a wide range of fashion shades.

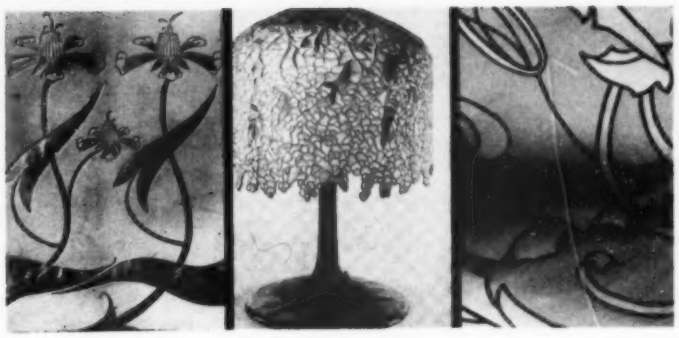
DIRECTION NUMBER 11: ***Boom in Formal Wear — One-Color Brocades Have Great Sophistication***

Dinner parties and Charity Balls are at an all-time high and there is no sign of a let-up in the social whirl. As a result, evening and cocktail fabrics are enjoying a boom of their own. Satins, chiffons, sheer wools (some printed), silk crepes and many other luxury fabrics are being revived with great success. We particularly like the self-jacquarded, one-color brocades which have an elegance and a sophistication sometimes lacking in the brighter (often gaudy) tones of the multi-color brocades. For prestige and profit we advocate the elegance of one-color brocades.

FABRIC BY PRINCETON MILLS

DIRECTION NUMBER 12: ***Man-made Fur with the Look of Lamb-skin Offers New Design Inspiration***

Simulated furs are here to stay and they continue to improve as weavers gain in experience. The fashion industry owes a debt of gratitude to the producers for the wonderful styling excitement and taste that has gone into many of the man-made fur creations. The newest development is a lamb-skin version which is timed to meet the growing demand for a lamb-skin look in linings and outerwear. Dynalon, dynel's 100% modacrylic, is used in this cotton-backed example which has been developed by Princeton Knitting Mills. It should provide men's, women's and children's designers with a new source of fashion inspiration.

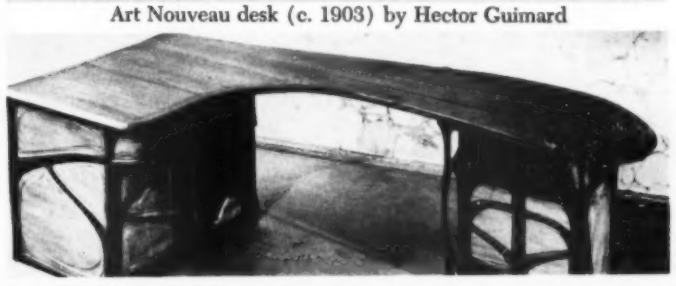


ART NOUVEAU

A Growing Design Trend

In the last issue of American Fabrics *(No. 49)* we predicted the advent of Art Nouveau as a strong design influence on textiles and fashion and told the story of its revival by Liberty of London. Our prediction is now documented by New York's Museum of Modern Art from whose current exhibit of Art Nouveau the two pictures *(above, left)* were taken. On the right is a typical example of a Liberty Art Nouveau fabric. The generic connection between the two is immediately obvious. The Modern Museum is a potent influence on American designers and we believe its sponsorship of this exhibit will add a new dimension to the trend launched by Liberty and Fontana of Rome.

Art Nouveau desk (c. 1903) by Hector Guimard

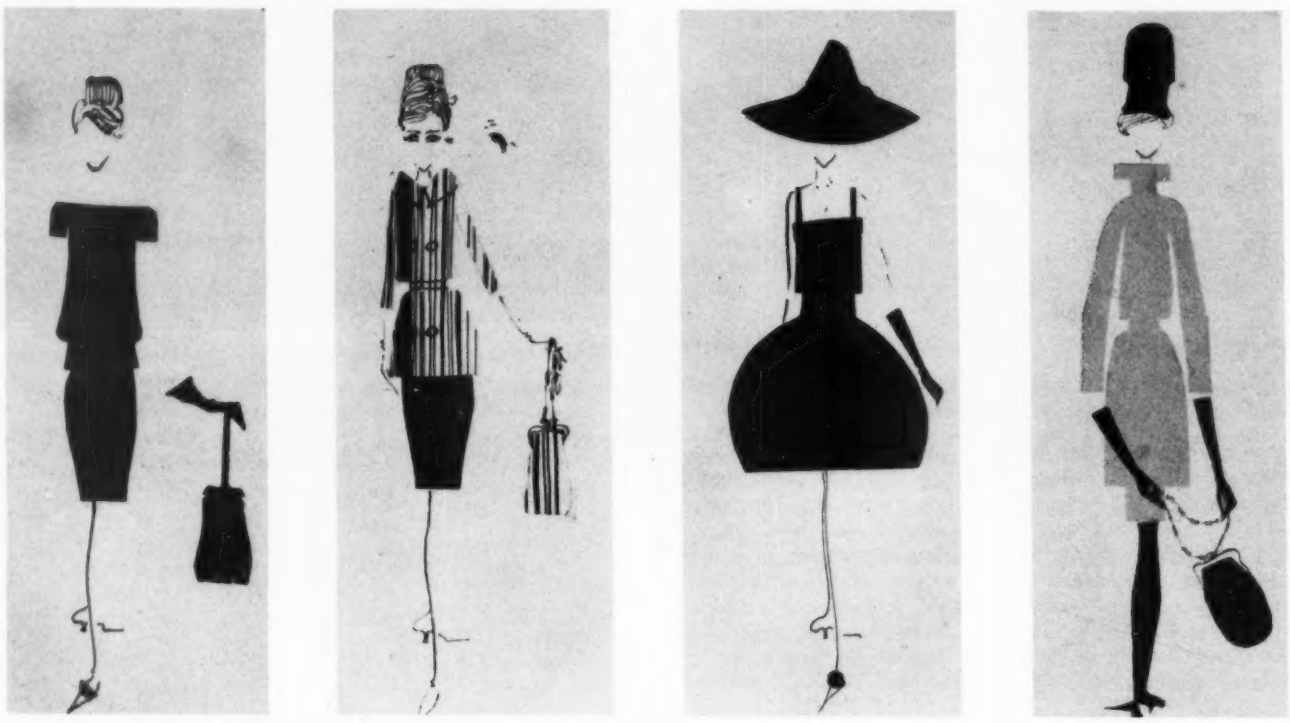


DIRECTION NUMBER 13: ***Batiks and Paisleys — with a Difference — Due for Future Promotion***

We can look to a crescendoing demand for batiks extending over the next several years. Designers are just beginning to learn how to handle this rich source of fashion design. The public likes and appreciates the exotic flavor and is taking to it wherever it is shown, both in men's and women's clothes. The next step in Batiks will be the development of western color and design modification. In our opinion, this will add extra appeal and sales potential to the batik trend since it will make it adaptable to a wider range of end uses.

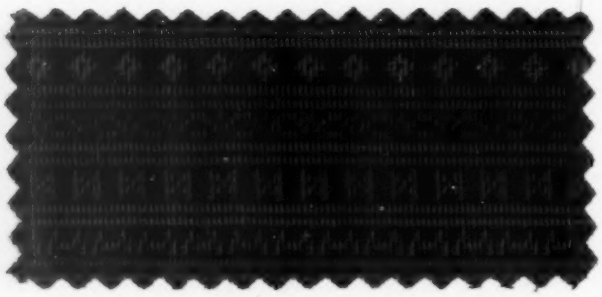
Forward-minded designers and stylists should also begin to think of paisleys as a logical follow-up to the batiks. By paisleys we do not mean the classic traditional paisleys but new designs and new colorings which embody what may be called the paisley look. More about this later!

PHOTO BY PETER FINK



SKETCHES BY PASCALINE

PACE-SETTING DIRECTIONS FROM PARIS: *The transition to subtler and plainer weaves continues to be a growing direction in Paris couture. . . . Printed jerseys – and especially silk knits – make their unmistakable impact. . . . Ditto for lightweight printed woolens. . . . Art Nouveau prints strike a responsive chord among the avante garde and that circle widens. . . . Elaborate and exaggerated at-home clothes continue to be a strong trend. Keep your eye on this. . . . For chic evening wear the long dress in both bouffant and slender silhouette takes the fashion spotlight. . . . There is strong high fashion interest in wool lace used over satin sheaths to achieve a pleasant contrast of textures. . . . Orient your thinking to a new high in prices for high fashion. Price is now no object if the customer wants it. . . . The chemise, loudly scorned by American males, has never been completely rejected. It lurks behind a belt and in general the relaxed silhouette is a strong contender for fashion leadership.*



FABRIC BY GALEY & LORD

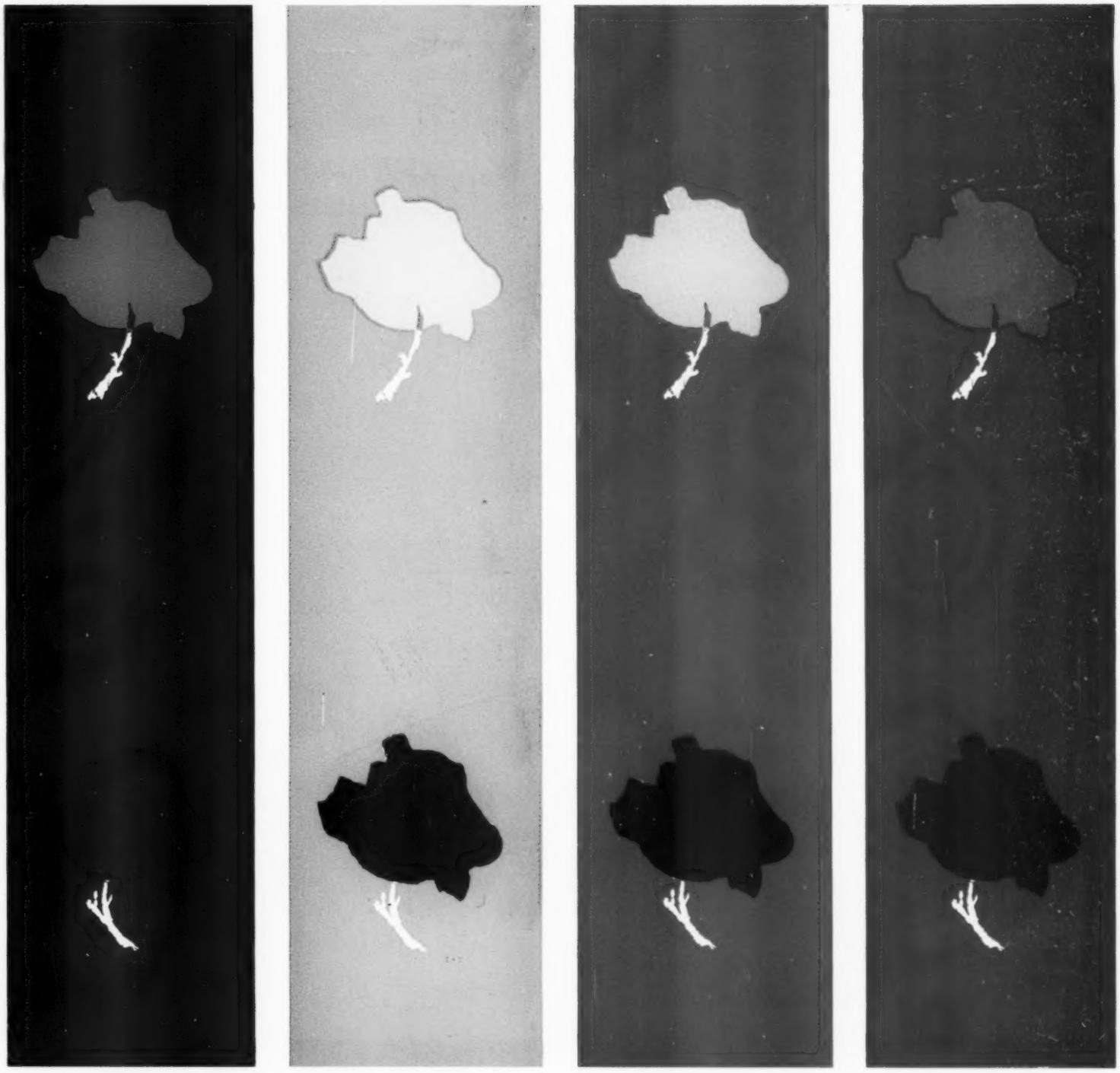
DIRECTION NUMBER 14: *The Greek Influence on Design*

The Greek influence on fabric and fashion design is growing. What is merely a groundswell at the moment should develop into a full-fledged style trend within the next year or two. Galey & Lord's interpretation of the Greek influence in Dacron and cotton was made especially for Pauline Trigere. It achieves authenticity through both design and color. The result is an effect which gives a new look to the double-woven fabric – a look which is bound to influence high fashion thinking. The single example shown here is representative of an entire group of Greek inspired designs which will undoubtedly set a trend in the coming seasons.

FABRIC BY RIA HERLINGER

DIRECTION NUMBER 15: *Double-Faced Fabrics Have New Design Distinction in Woolen Coats*

Double-faced woolens – known as reversibles and wearable on both sides – have taken the fancy of top-flight designers. There is an undeniable distinction and richness – even extravagance – in wearing a coat which is just as fine in quality and finish on the inside as it is on the outside. These reversible fabrics are also a great designing aid in that they provide ready-made detailing for a costume. They impart a custom, rich but understated look which is not lost on smart women.



PALES, BRIGHTS and DEEP ACCENTS
in the same color family

From American Fabrics Color Council Reports – July, 1960

DIRECTIONS
in HOME FURNISHING FABRIC DESIGNING

FABRIC BY BORIS KROLL

DIRECTION NUMBER 1: *A Modern Color Approach to Renaissance Design Themes*

Boris Kroll, one of America's most versatile fabric creators, has taken a series of traditional Renaissance patterns and has colored them in a fresh modern idiom. The result is both beautiful and at the same time remarkably adaptable to modern decor. Kroll has shown that it is not necessary to discard the accumulated taste of earlier design periods. What is necessary is to look at these traditional motifs with a fresh eye and to interpret them with due consideration for new dye techniques and new ways of living. The example shown here is but one in a wide range of classic designs.

FABRIC BY FRED J. KERN TEXTILES

DIRECTION NUMBER 3: *The New Art of Blending*

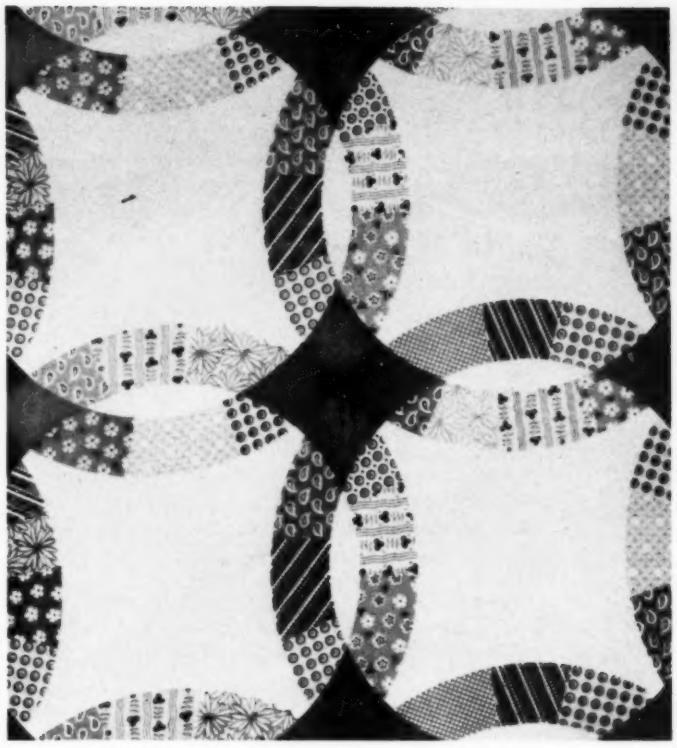
An example of excellent blending, showing richness plus stability is this fabric from the loom of Fred Kern. All the ingredients of superior textile are present in this silk and mercerized cotton cloth. It has the rich textured lustre of the most expensive silk plus the dimensional stability and good body provided by Dixie's Mercerized Cotton. Used for upholstery, drapery or bedspreads, this fabric is a yarn dyed antique satin with a silk dupioni filling and a cotton warp. Fabrics like this show the interesting and versatile results now being achieved in the market through the creative use of fiber blending for a wide range of specific fabric uses.

DIRECTION NUMBER 2: *The Greek Look in Home Fabrics*

PHOTOGRAPH OF GREEFF FABRIC

PHOTOGRAPH OF HEXTER FABRIC

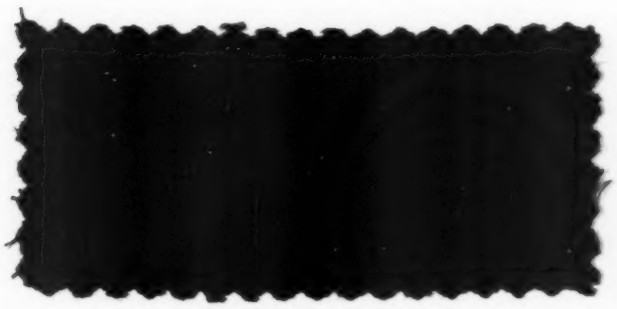
There is every indication that the Greek revival so strongly developing in the apparel field will have its impact on the decorative fabrics field. The sensitive antennae which pick up new influences are never confined to one place or to one application. Prints which take their cue from the Greek influence and yet retain the contemporary flavor will be a definite direction in the home fashions field. We show photographs of two such examples. One, from S. M. Hexter, is made of 100% cotton. The other, from Greeff Fabrics, is made of Fiberglas.



PHOTOGRAPH OF EVERFAST FABRIC

DIRECTION NUMBER 4: *Revival of Provincials*

The revival and continuing popularity of American Provincial decor is an important influence on fabrics for the home. There is always a healthy section of the market which welcomes this approach when it is achieved in a sophisticated idiom. We believe it will continue to enjoy no less than its one-fourth share of sales for the coming few seasons. A particularly attractive example of American provincial – one which is both nostalgic and sophisticated – is Everfast's wedding ring calico pattern of 100% cotton.



FABRIC BY SHULMAN

DIRECTION NUMBER 5: *The Hand of Silk*

The interest in luxury fabrics is as widespread in the home fabrics field as it is in apparel, and since silk suggests luxury it is logical for fabric designers to attempt the hand and appearance of silk in the new scientific fibers. The swatch shown here is an interesting example of this trend. It was developed by Shulman Fabrics as a drapery and upholstery cloth and comes as close as any we have seen to the luxurious texture of far Eastern silks. The cloth is woven from American Bemberg's special process yarn of continuous filament Cupioni. The effect is achieved by a bulking process which combines two differently colored yarn-dyed strands without twisting so that they can be woven as a single yarn. The fabric is available in three different weights and in a wide range of colorings on both white and black warps.

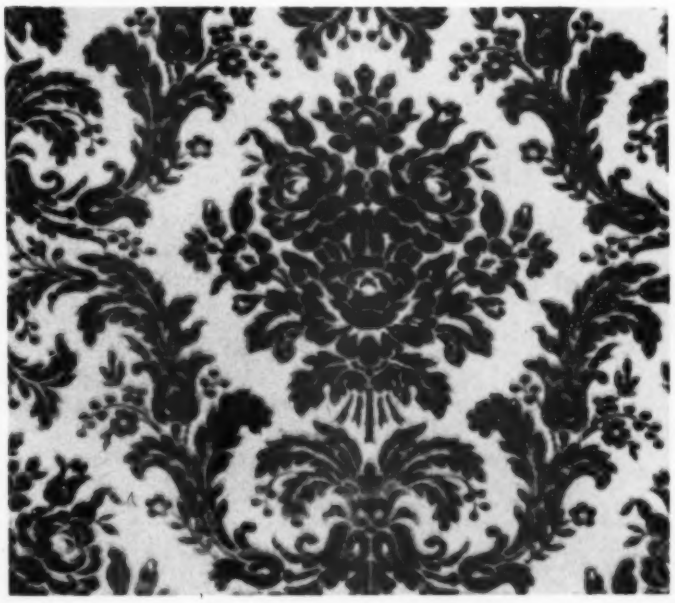
PHOTOGRAPH OF EVERFAST FABRIC

DIRECTION NUMBER 6: *Revival of Fortuny-type Prints*

The direction of textile design frequently moves in cycles but the important ingredient for fashion acceptance is often the factor of correct timing. We believe the time is ripe for the revival of the Fortuny print. Properly executed, this type of print is a sound and safe direction in the home furnishing field. It fits in admirably with the demand for elegance in the home and it is easily adapted to all price categories. An example of such a Fortuny-type print, interpreted for the volume market, is shown in the photograph of Everfast's all cotton fabric.

DIRECTION NUMBER 7: *The Oversized Floral Pattern*

In more spacious periods of history traditional home decoration luxuriated in the use of oversized floral patterns in settings of corresponding scale. And now once again both decorators and homemakers are beginning to realize that it is possible to use the oversized floral design without sacrificing good taste or appropriateness. The large scale Renaissance pattern in cut velvet which we show here is an outstanding example of the current belief that scale can also supply elegance.



PHOTOGRAPH OF JOFA FABRIC

AMERICAN FABRICS NO. 50

SUMMER 1960

CONTENTS

COVER DESIGN
A rose in many colors forecasts the fashion shades now in the ascendency. By W. Lully.

FABRIC DIRECTIONS 3
Highlighting the important fabric, fashion and color trends as a guide to designers, manufacturers, and retailers.

DIRECTIONS IN HOME FURNISHINGS FABRICS 8
A condensed report on significant idea trends which are setting the pace in fabrics for the home.

WHITHER MAN-MADE FIBERS? 45
After a decade of surging progress in man-made fibers, it is time to look with perspective on the bold entrance of chemistry into the field of textiles. This AF presentation analyzes the major developments to date, sifts out the facts from the wish-fulfillment and takes a bold look into the future. Above all, it documents the major role man-made fibers must play in fulfilling the needs of a rapidly growing world population.

THE TRICOT DRESS SHIRT 53
A new concept in wash-wear business shirts for men has been developed through the use of man-made fibers in shirting fabrics knitted on tricot machines.

TEXTILE TESTING 54
Security for the consumer is the keynote of all textile testing. AF takes you behind the scenes to show you the range and scope of current testing procedures.

A RAINCOAT IS FOR RAIN 56
But Lawrence of London has transformed a utilitarian garment into a fashion spectacular through the use of many unexpected fabrics. An AF Fashion Profile.

A NEW DIMENSION IN ROLLER PRINTING 60
The 4-color process for printing on paper has at long last been closely approached on fabric through the application of Cibacron reaction dyes by Trichromatic textile printing. An exclusive AF feature containing actual swatches demonstrating four stages in the Trichromatic printing process.

MIDTOWN MAVERICK IN THE HOME FABRICS FIELD 62
Fuller's Dolph Moore has broken with tradition to become a pace-setter in an industry full of preconceived ideas about what the public will buy.

GALLIC MONOTONES 66
The work of the French home fabrics designer — Yves Cuvelier — reflects an interior design direction which is becoming increasingly important in this country.

NEW GRAPHIC MURALS BY ILONKA KARASZ 68
A famous artist and designer creates a new concept in room decoration through the use of panel murals on paper.

GREEK DESIGN FOR THE MODERN WORLD 69
An illustrated seven-page essay on the significance of Greek art as an inspiring sourcebook for modern designers. A special section is devoted to the costume of ancient Crete which has many ideas to offer the contemporary world of fashion.

THE HORSE AND THE OLD MAN 76
A Fable for our times.

THE LOGIC AND MAGIC OF COLOR 77
An eight-page illustrated feature devoted to the all-important subject of color. The article offers a concise and lucid examination of color — its science, its historical development, its recurring fashion cycles and its importance to art and to commerce. The illustrations — both in color and black-and-white — demonstrate the effective use of color in fashion.

THE CLUNY TAPESTRIES 85
An eight-page pictorial essay on one of the world's great textile treasures — "The Lady with the Unicorn" tapestries from the Cluny Museum in Paris.

THE FASHION WORLD OF PETER FINK 93
A series of brilliant photographs by one of the world's outstanding fashion photographers, reveals the elegant world of haute couture.

ANNI ALBERS ON DESIGNING 98
The world-famous designer and weaver discusses her theory of textile design and the role of the handweaver in modern industry. Illustrated with photographs of Mrs. Albers' pictorial weavings.

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dotted swimsuit from the "for the beach" collection of White Stag . . . in Folker's Silcoona of 100% Avron rayon

MONARCH OF THE SEA-SIDE: AVRON*

HIGH STRENGTH RAYON

Avron alone or in blends will give the 1961 resort-fashion fabrics a truely unusual brilliance of color, strength and softness of hand. You'll be seeing everything from swimsuits to cocktail dresses in fabrics woven with Avron rayon.

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AVRON high strength rayon

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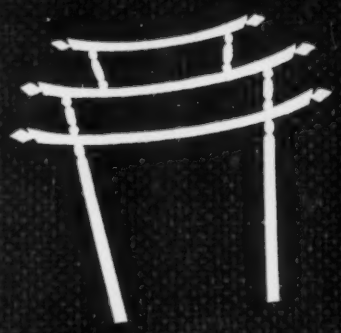

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The wonderful
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shades never achieved before in a fabric containing
polyester: cross dyes such as yellow/orange, rose/orange,
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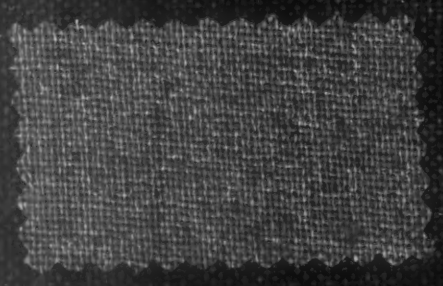

Vycron
POLYESTER FIBER

BEAUNIT MILLS, Inc., Fibers Division • Main Office: 261 Fifth Avenue, New York, 16, N.Y. • Plant: Elizabethton, Tenn.

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"BEMBERG" IS THE REGISTERD TRADE-MARK FOR AMERICAN BEMBERG CUPRAMMONIUM RAYON YARN.

VYCRON IS SPUN FROM VITEL®, GOODYEAR POLYESTER RESIN.
†Woven by Evrard Woolen Mills (McCampbell & Company).

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Fly-away costume
designed by John Moore
in a woven mosaic fabric
from Galey & Lord.

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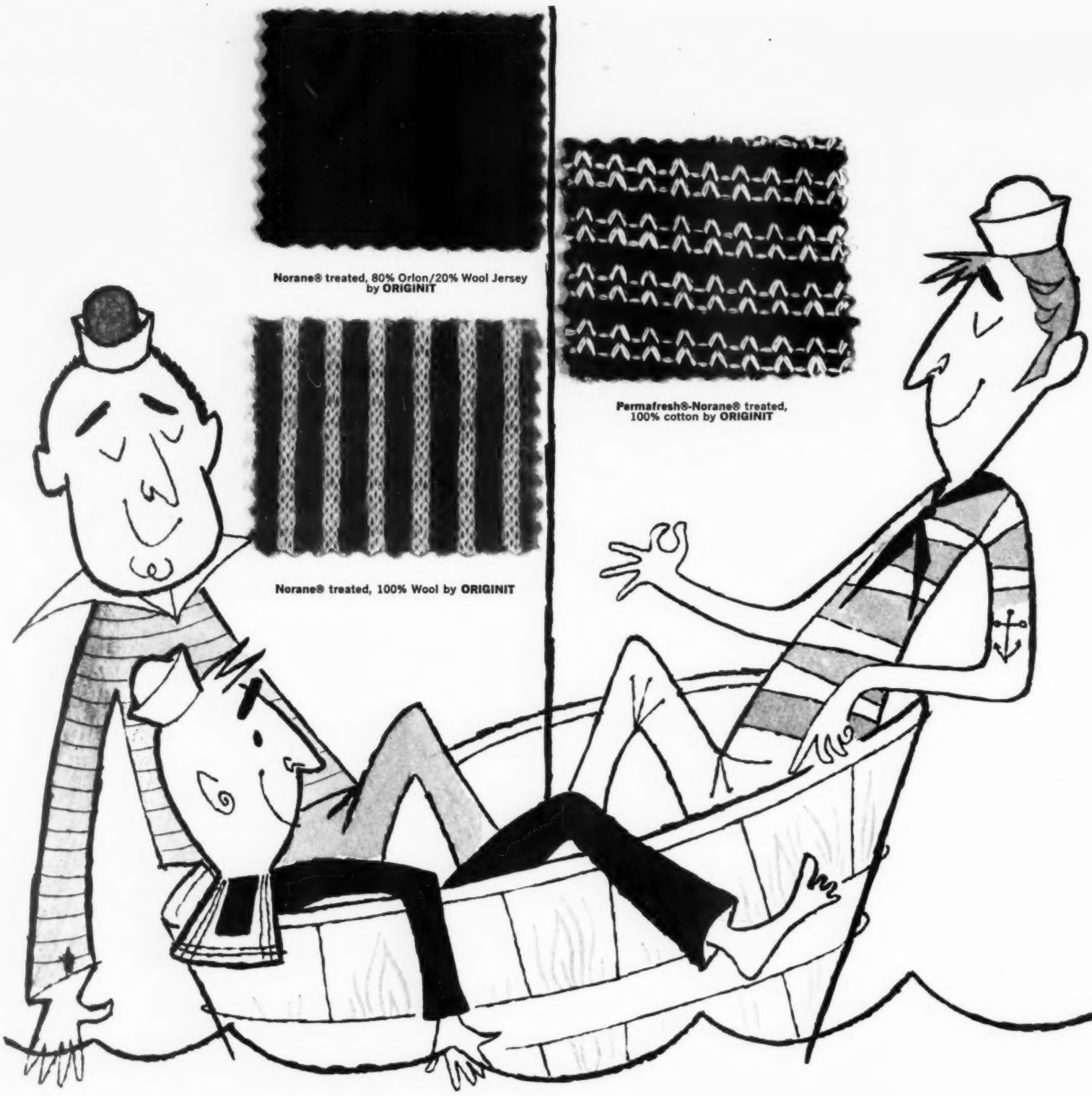

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A booklet with samples of fabrics, reprinted from American Fabrics is available: ask for "A Very Important Development in the Outerwear Field."

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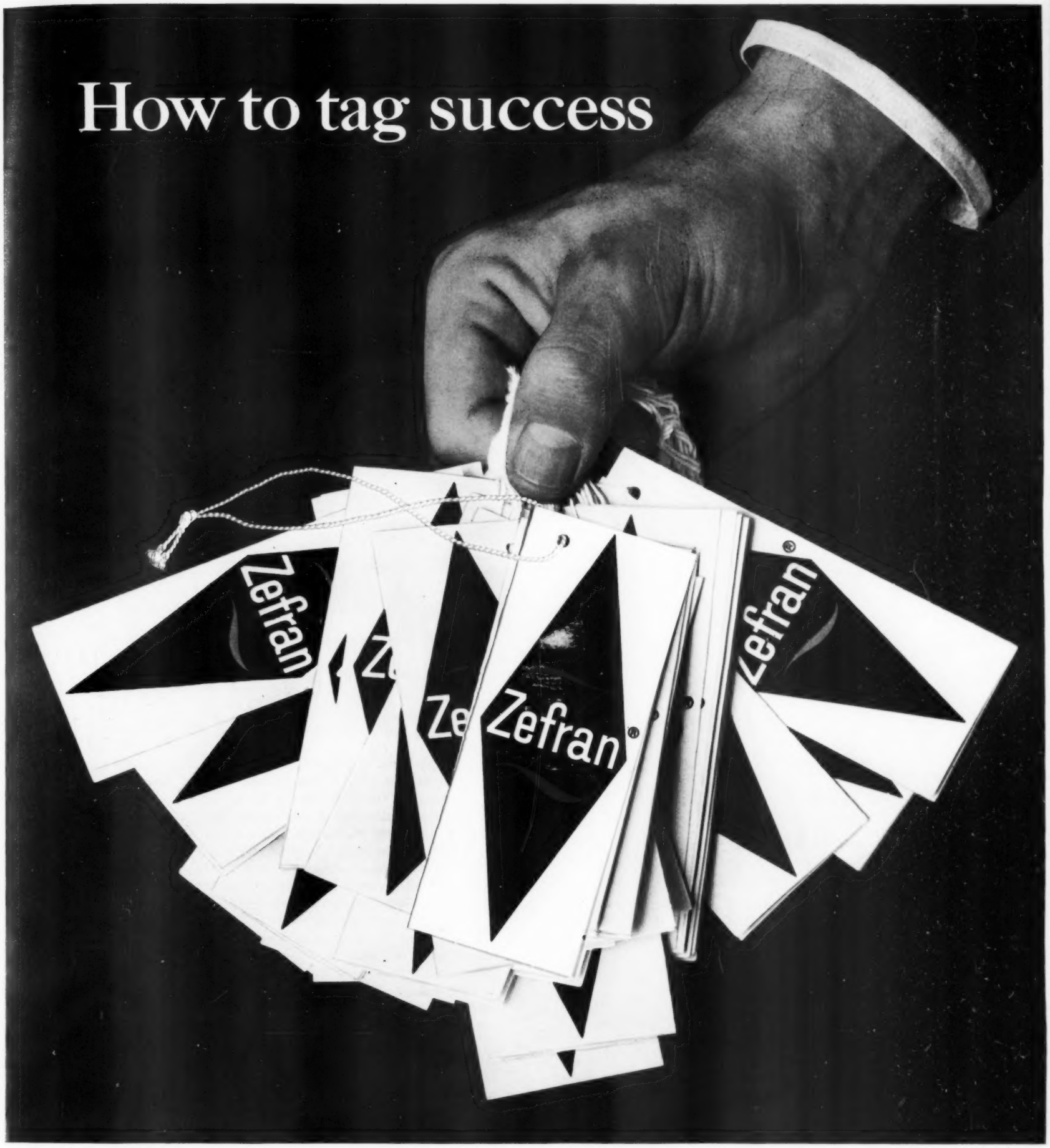

For spring and fall '60 follow the lead of pace-setting manufacturers who have chosen Zefran* acrylic—the *beautiful* acrylic —in fabrics of: **100% Zefran® acrylic; Zefran acrylic & *cotton;* Zefran acrylic & *wool;* worsteds of Zefran acrylic & *wool.***

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Excitingly new and different design ideas resolve almost magically in fabrics woven with SAABA textured yarn!

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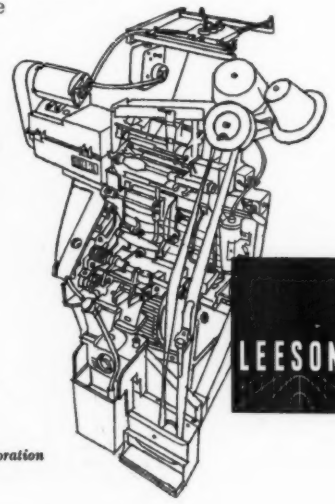
Any weave room equipped with UNIFIL® Loom Winders can weave SAABA fabrics. The weaving-from-a-cone advantages of UNIFIL Loom Winders assure a uniformity of surface texture, and provide production versatility never before possible.



SAABA is produced by America's leading throwsters on machines developed and manufactured by LEESONA CORPORATION. To use it *successfully* and *profitably*, get all the facts from LEESONA CORPORATION, P. O. Box 1605, Providence 1, Rhode Island.

LEESONA

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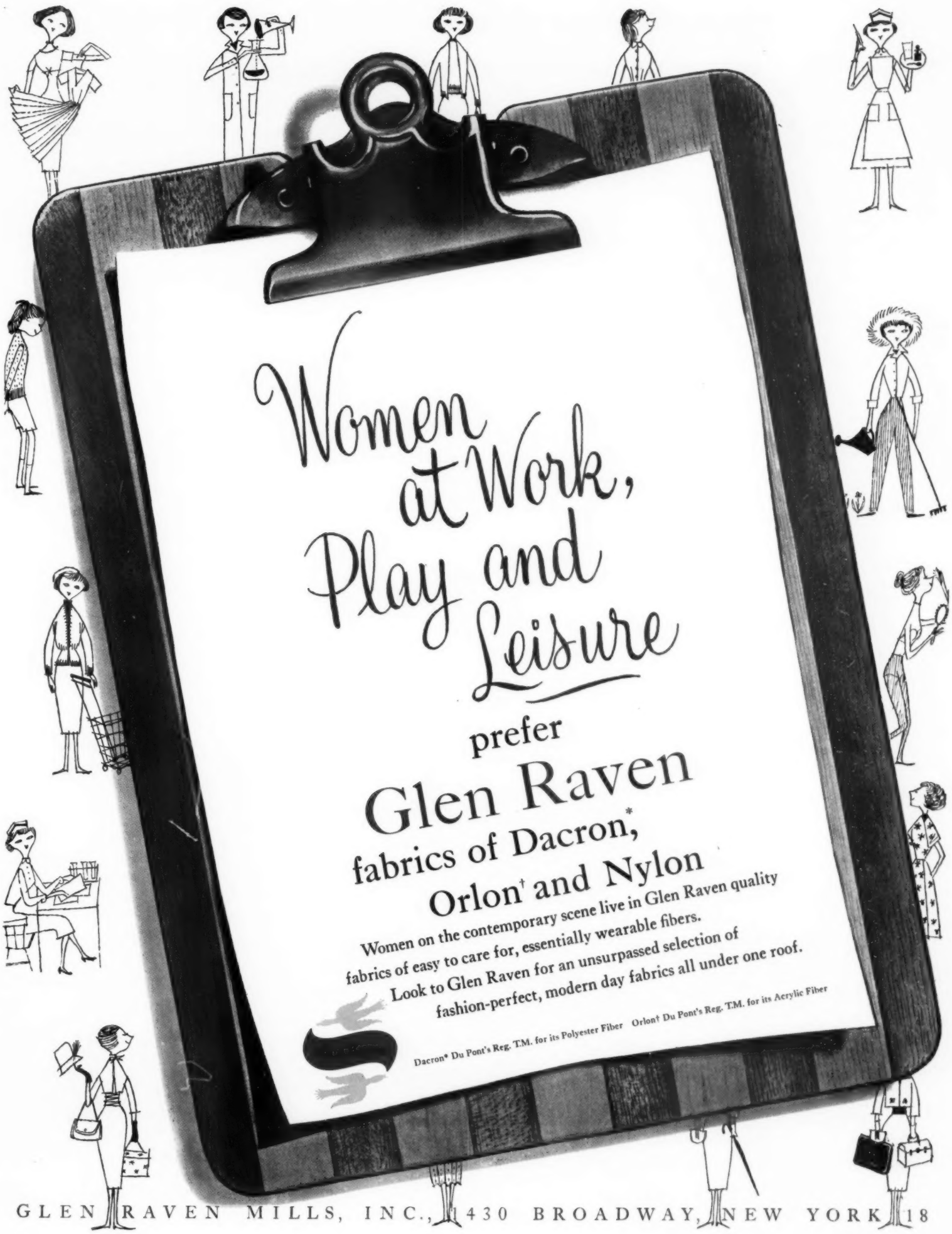
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Look to Glen Raven for an unsurpassed selection of fashion-perfect, modern day fabrics all under one roof.
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GLEN RAVEN MILLS, INC., 1430 BROADWAY, NEW YORK 18

Q . . . how did Cluett Peabody take the Wish out of Wash and Wear?

A *Choosing a cotton for their finest wash and wear shirt was no snap decision for Cluett Peabody. This famous organization had to be absolutely certain* that the fabric performed better than any other wash and wear cotton. For months they tested *Belfast* self-ironing cotton along with scores of other fabrics. They washed them all by machine; they washed them by hand. They spin dried them, tumble dried them and hang dried them. They sent them to the commercial laundry. They did all this, not once, but dozens of times. And of all the woven fabrics tested, *Belfast* cotton was the only one with a consistent wash and wear performance record worthy of their Golden Arrow line. *Belfast* proved itself in rigid objective tests. *Belfast* cotton proved the only cotton that could be spin dried, the only cotton that never lost its no-iron properties no matter how it was washed and dried, no matter how often!

Cluett Peabody picked **Belfast®** *self-ironing cotton*

for Golden Arrow

America's most distinguished Wash and Wear Shirt

®Belfast is the Registered Trademark of Deering Milliken Research Corporation, for Self-Ironing Fabrics.

Permanent Wash and Wear Means Permanent Satisfaction . . . for Both the Trade and the Consumer

No Washing Instructions Needed

You can wash and dry *Belfast* cotton any way you like! Here's wash and wear performance with no strings attached. Whether your customer spin dries, tumble dries, or hang dries *Belfast* self-ironing cotton, it's ready to slip on, mirror-smooth, laundry-groomed. No fine type to read on the hang tag. *Belfast* cotton is wash and wear, period! Your customer is the boss. Your customer chooses the method of laundering. *Belfast* cotton does the rest. She washes it, she dries it and she wears it — proudly!

And *Belfast* cotton can alternate between the home laundry and the commercial laundry without losing any of its exclusive iron-in-the-wash advantages. It means that when you sell *Belfast* cotton as wash and wear, it will remain wash and wear no matter *who* washes and dries it and no matter *how*!

Now Wash and Wear Performance can be Measured

A reliable standard of wash and wear performance has been adopted by the AATCC. Unless a fabric scores at least 4.0 in the Monsanto three-dimensional plate tests, it isn't considered true wash and wear. *Belfast* self-ironing cotton for apparel and piece goods always tests out at 4.0 or better or doesn't leave the plant. Often, *Belfast* cotton scores better than 4.5. This is genuine wash and wear performance when you remember that 5.0 is maximum. And *Belfast* cotton scores 4.0 or better no matter how it's washed and dried and no matter how often!

No other Fiber, Finish or Woven Fabric Can Meet This Standard

This Tag Is Your Guarantee!

If you are a manufacturer of:

women's dresses	*uniforms*	*men's shirts — dress and sport*	*bedspreads*	*fabrics for over-the-counter market;*
children's dresses	*lingerie*		*slipcovers*	
sportswear	*sleepwear*	*curtains*	*sheets and pillow cases*	*plus many other products made of cotton*
blouses	*boys' wear*	*draperies*		

New *Belfast* self-ironing cotton for apparel and piece goods must test out at 4.0 or better. And if *Belfast* cotton doesn't test out, *Belfast* cotton doesn't get out. *Belfast* cotton must meet this standard of smoothness whether spin dried, tumble dried or hang dried.

But smoothness is only one of the rigid quality controls imposed by Deering Milliken Research Corporation. DMRC employs a large staff of highly trained technical experts devoted exclusively to testing *Belfast* cottons.

Gruelling tests for dry and wet crease recovery, tensile strength and tear strength must be passed. It isn't enough for *Belfast* cottons to iron in the wash. They must iron in the wash no matter how often they're washed.

Each End Use has its Own Special Performance Standard. And Each Test is made with Each End Use in Mind.

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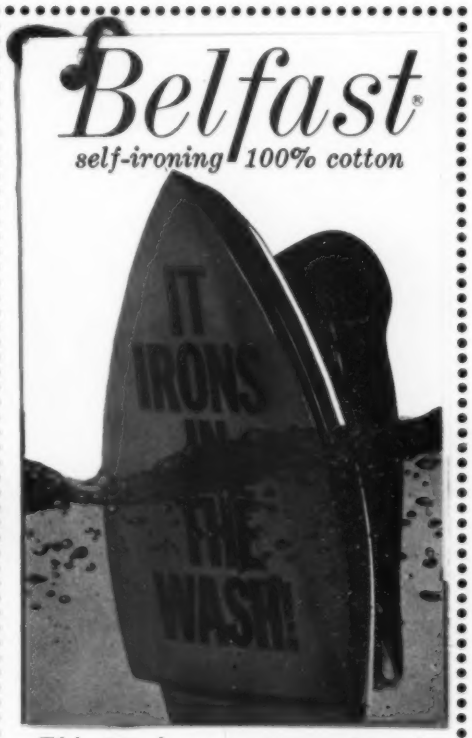
BELFAST Self-Ironing Fabrics Div., 1045 Sixth Ave., New York



This tag is your guarantee of excellence in wash and wear.

Q . . . how did Cluett Peabody take the Wish out of Wash and Wear?

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sportswear	*sleepwear*	*draperies*	*sheets and pillow cases*	*products made of cotton*
blouses	*boys' wear*			

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how often they're washed.

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alive
with shimmering

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...perfectionists in chemical transformation of fibers and fabrics

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DU PONT

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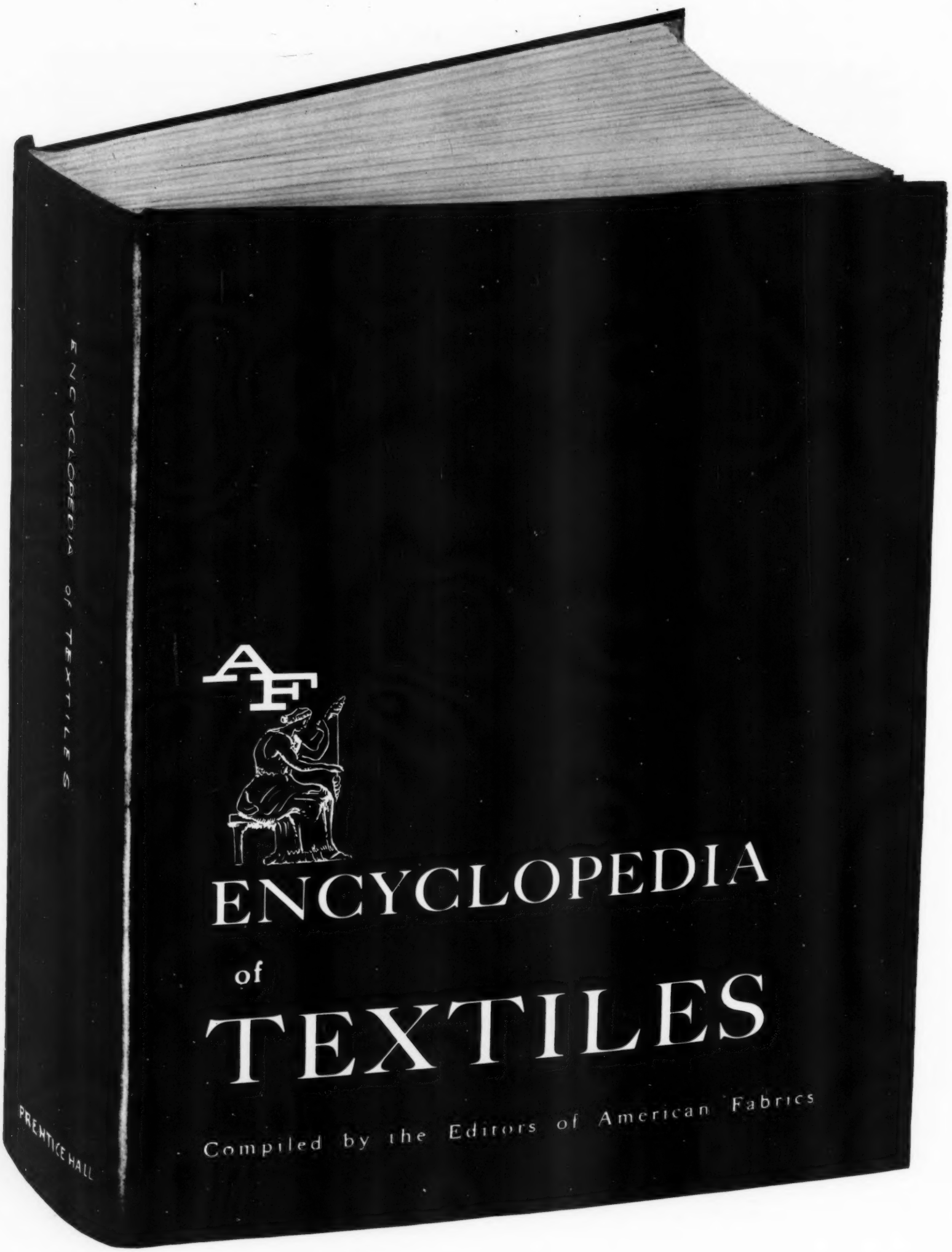
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of
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Compiled by the Editors of American Fabrics

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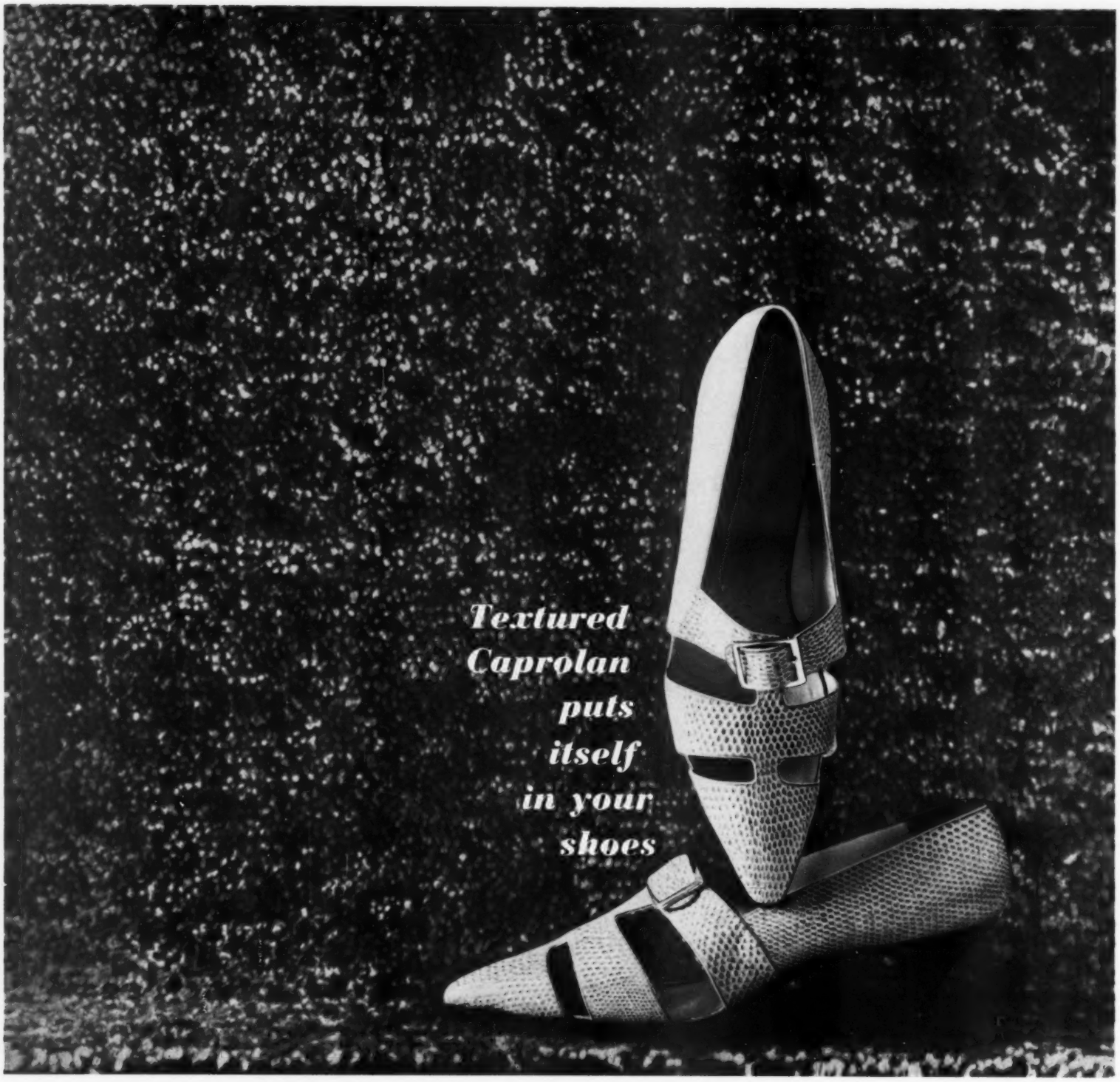

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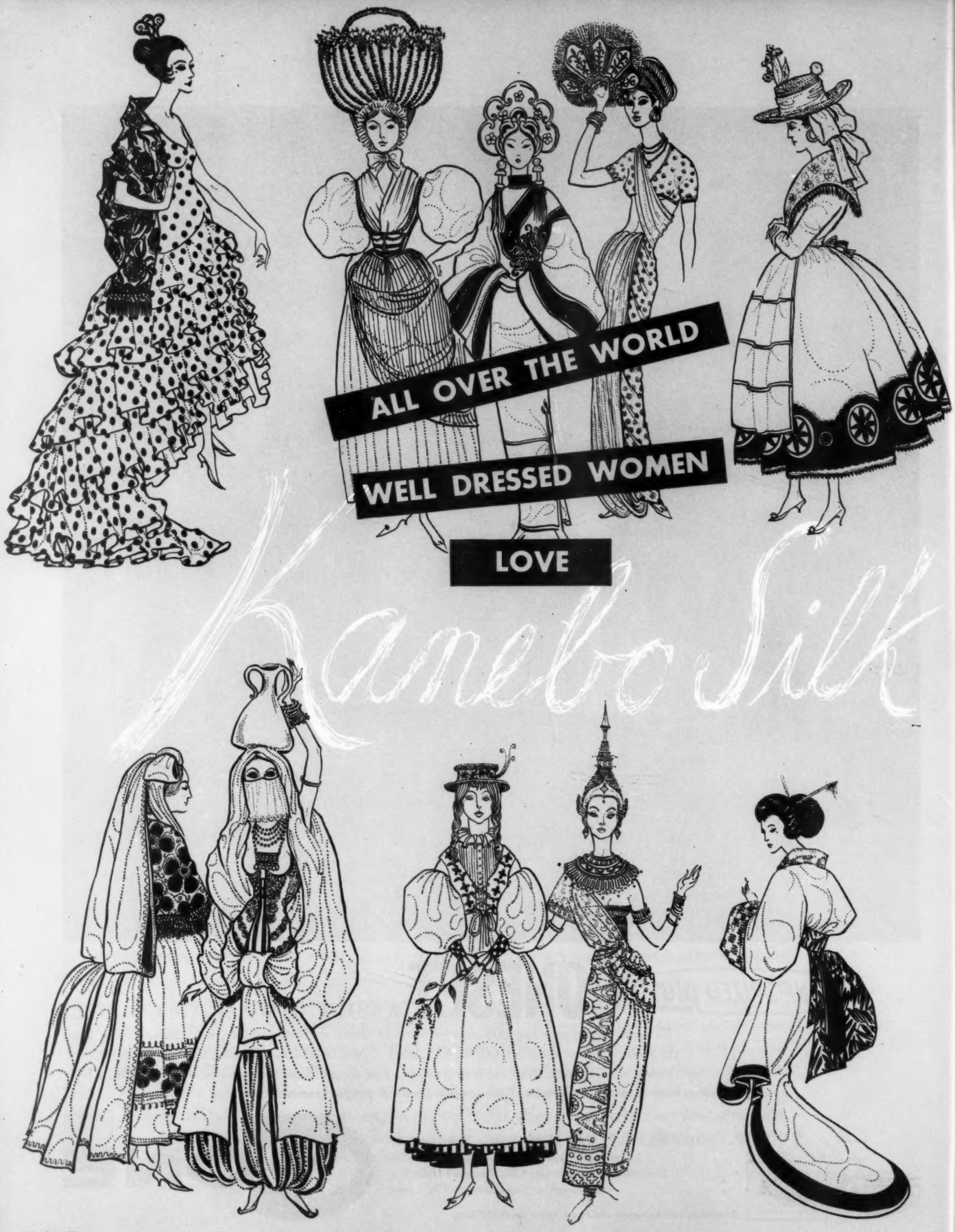

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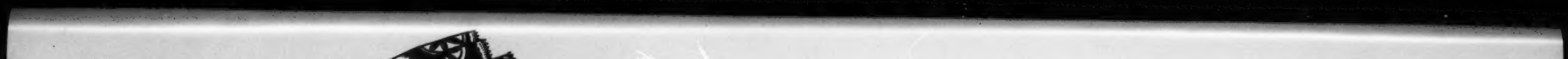

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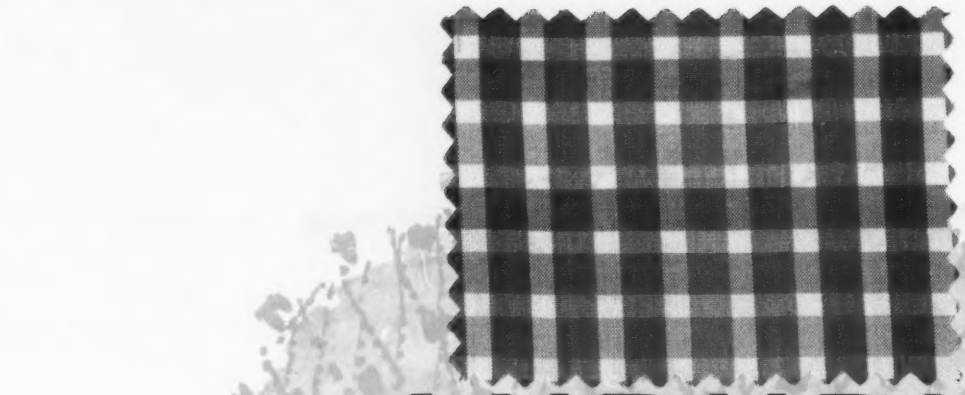

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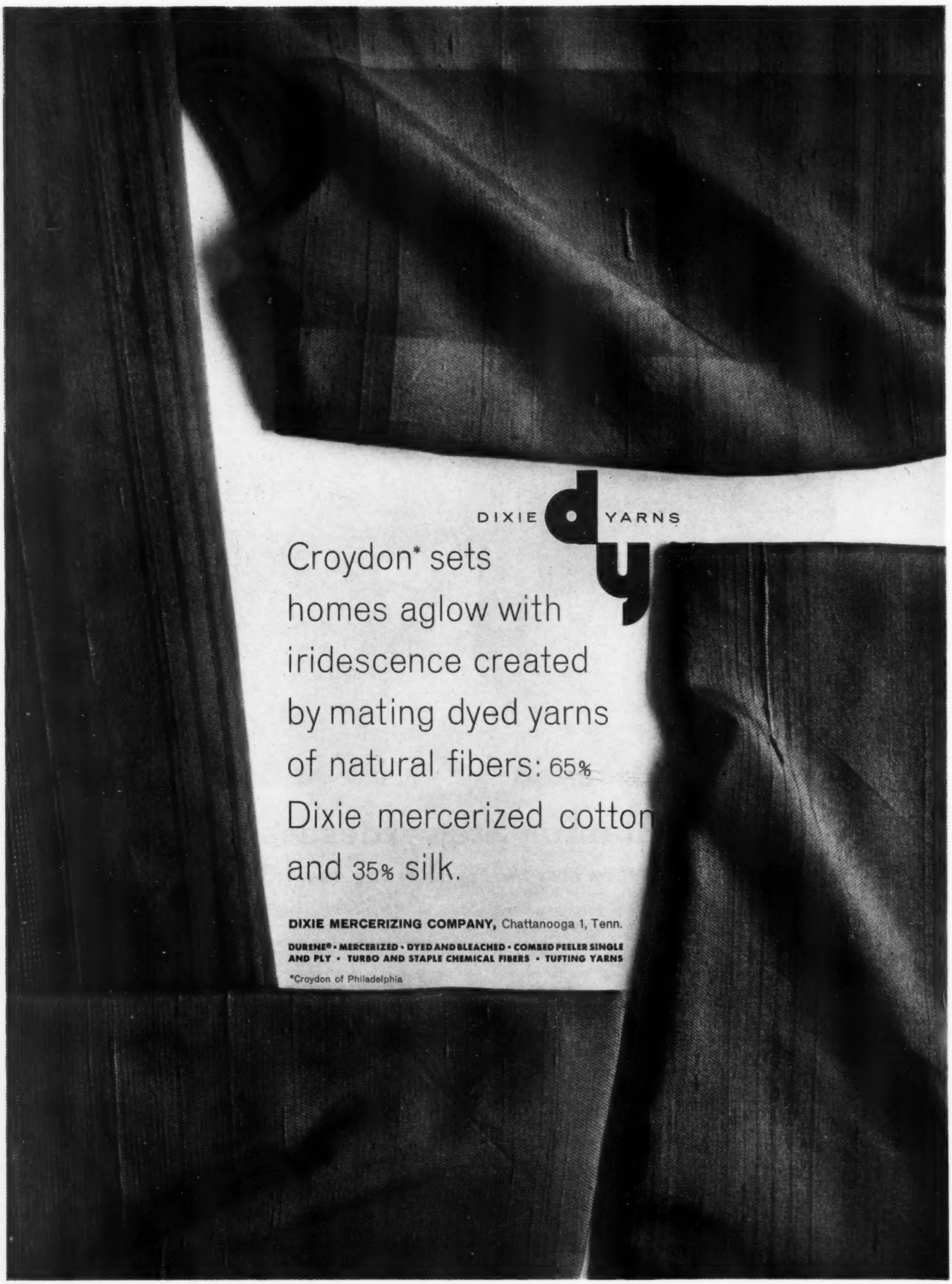
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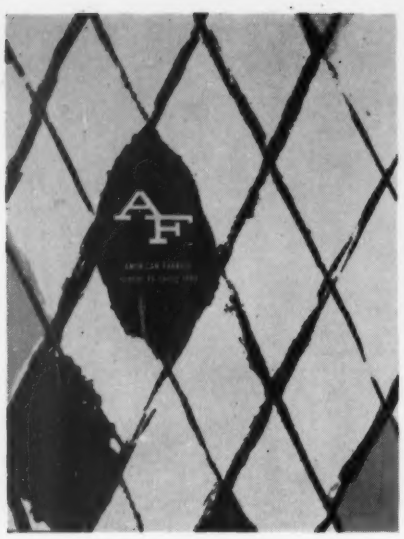

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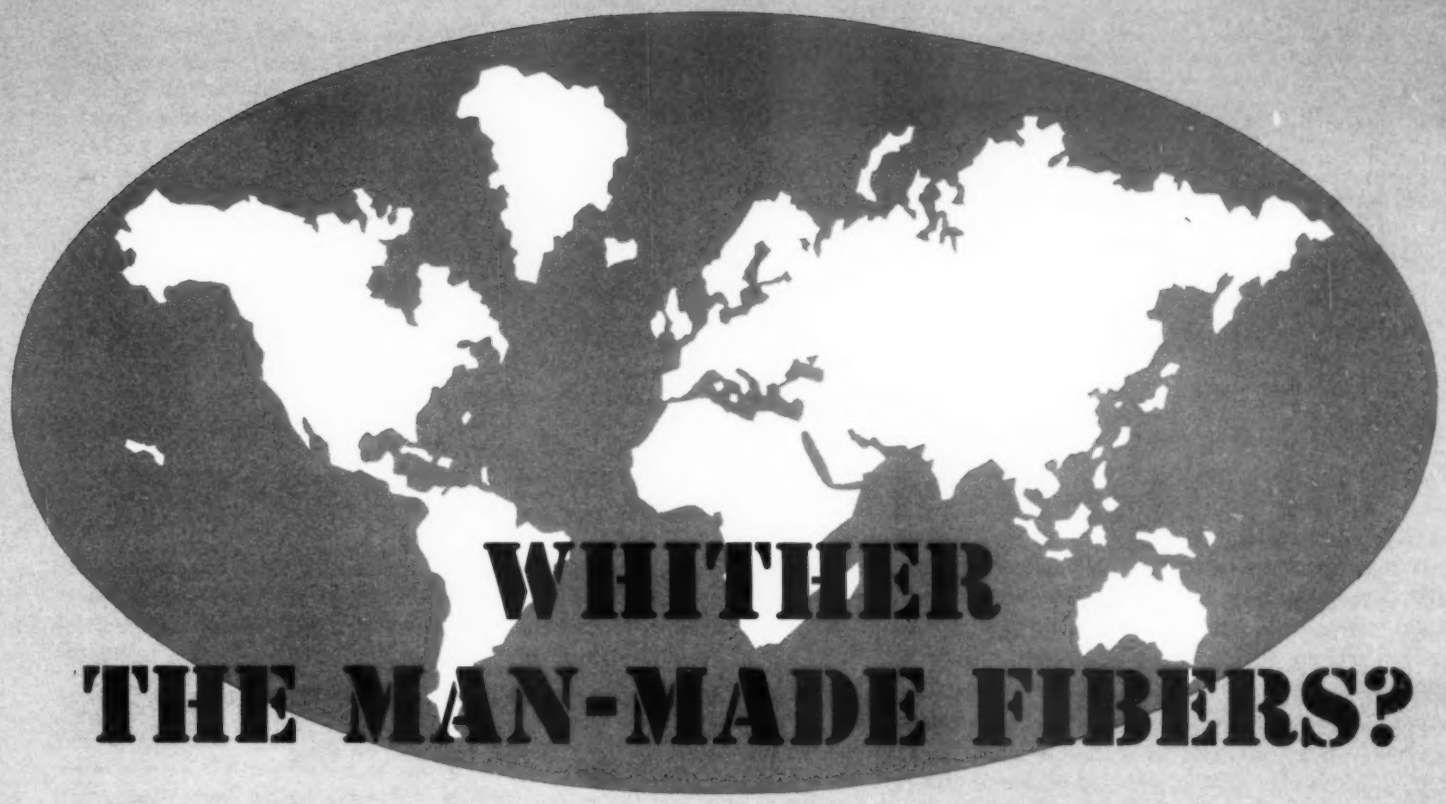


WHITHER THE MAN-MADE FIBERS?

How great is the world's overall need for textile fibers? Can the natural fibers supply this need?

What are the basic future directions for the man-made fibers?

Is there a real conflict between man-made and natural fibers? If so, can it be resolved?

How much of an increase will there be in world per capita consumption of fibers in forty years?

Which of the new man-made fibers hold greatest promise for future development?

What is the relation of growing world population to future textile needs?

Is there a saturation point in world's economic ability to absorb new fibers?

How effective is the current marketing picture in the man-made fiber field?

These are some of the important questions the Editors of American Fabrics seek to illuminate in this special report and analysis.....☛

After a decade of surging progress in man-made fibers, it is time to look with perspective on the bold entrance of chemistry into the textile field. Charles de Cizancourt and the Editors of American Fabrics analyze the major developments to date

WHITHER MAN-MADE FIBERS?

The development of man-made fibers goes far beyond the industrial and economic sphere. When fully projected, it has an importance that touches on human values and human progress.

Statistics show us the disturbing fact that there is a vast and continuing increase in world population coupled with a parallel rise in mass purchasing power. From this we are led to conclude that in a few years there will be a shortage of natural fibers even for the most elementary textile needs.

It therefore becomes vitally important to counteract this disturbing trend by asking chemistry to make up for nature's defaults in ever-increasing measure, to require the chemical industries of the world to recognize the importance of what is at stake and to engage their utmost resources in a struggle which must be won for the future of mankind.

Need for a Joint Effort

In order to assume an undertaking so beneficent yet so hazardous, it would seem desirable (while maintaining necessary competition) for the great producers of basic materials to pursue this common action jointly, pooling their research, their efforts and their potentialities, in order to insure the most effective outcome and speedy success for an undertaking of such individual scope and vital necessity.

This is the French, or rather the European, viewpoint in regard to the problem of man-made textiles and the historic role which should be assigned to them.

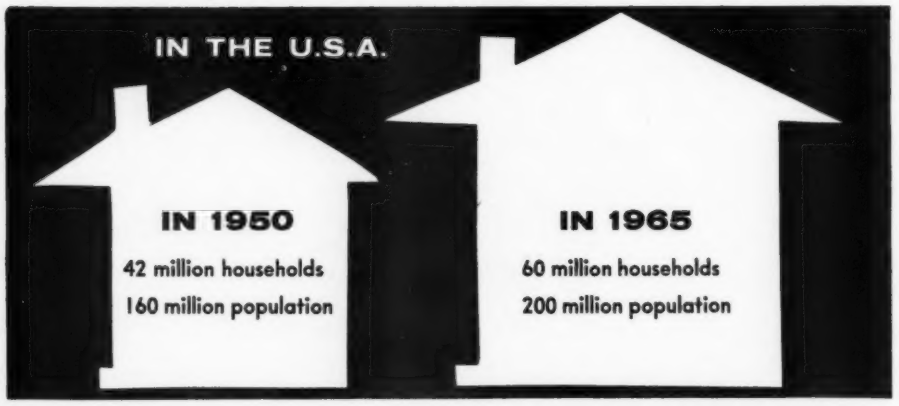
Today the important role of the man-made fibers is accepted in all parts of the world. Not so well understood, perhaps, is this increasing need for man-made fibers to supply the growing world needs. Once this is understood it becomes important to take note of the sense of this evolution and to define a direction for the future. And here the experience and the perspective gained in Europe should be of great help to the United States textile industry.

The Development of Man-Made Fibers

First of all, two major factors must be emphasized:

1. *There is no longer any opposition between the natural and the man-made fibers.*

At the birth of man-mades the hostility of the tradition-



WORLD POPULATION AND TEXTILE NEEDS

Present world textile production—calculated against present world population—shows an average per capita consumption of between 10 and 13 pounds. However, per capita consumption in the United States is over 40 pounds and while the figure is much lower for other less industrialized countries, it is increasing rapidly as living standards rise.

Already, in terms of per capita consumption, the production of natural fibers is some 4 million tons short of world demand. The gap is being filled by man-made fibers. But by the year 2000 it is estimated that the world's total textile requirements will be approximately 40 million tons.

The major share of this requirement (nearly 60%) will need to be filled by the man-made fibers unless the production of natural fibers more than doubles – and this does not seem even remotely possible in the light of current estimates.

The population of the world today is estimated to be in the neighborhood of 2700 millions and increasing at the rate of approximately 2¼% each year. This means that by the year 2000 the population of the world will be about 5 billions.

Here lies the challenge, the responsibility and the opportunity for the man-made fiber industries of the world.

oriented textile industry was violent. Today it is quite clear that there is an increasing fusion between the different branches of the textile industry to such a degree that there is hardly a single cotton, wool, or silk textile producer who does not use man-made fibers in some degree.

The attitude of European producers is amusingly reflected through two characteristic quips.

The first is about the cotton textile man, who, in order to establish the validity of the chemical treatments astutely applied to cotton, says "We are trying to give this fabric the qualities of man-made fibers." The other: a wool textile man, at one of the last annual meetings of his corporation says "To sum up, there is nothing left to do but to have our sheep grow synthetic wool."

Quips, but how significant of the new spirit and how revealing of the decisive victory the new fibers have won in current competition.

Today the man-made fibers have not only been integrated into the textile industry but are more and more playing a dominant role. They are becoming the dynamic and central element.

2. ***The public is no longer suspicious of man-made fibers.***

For a long time the man-mades were ostracized and were regarded by the consumer as substitutes, though that did not prevent those engaged in the business from making substantial profits. Today this bias against the new textiles has disappeared and even the consumer now confers on them their commonly admitted qualities. They now have a revolutionary and almost transcendent value.

In the beginning the public had a marked antipathy towards the new fibers – as much from habit as from judgment. Even during the recent years there was still mistrust of man-made fibers (allergy, etc.) but today this unfavorable climate has been entirely dissipated and the consumer is definitely receptive to all the new creations which are being so lavishly offered. The public is laying aside its old habits in order to join in the adventure offered by nylon, Perlon, Orlon, Acrilan, Creslan, Zefran, Dacron, Kodel, Tergal, Trevira, Terylene, Rilsan and many more. These are names which today represent conquests since the consumer now understands that each of them means a liberation from domestic slavery.

EDITOR'S NOTE. Charles de Cizancourt is considered by many to be the world's most authoritative writer on the emergence of man-made fibers. M. de Cizancourt is a Frenchman, the author of a definitive work: "The Scientific Textiles."

His uniqueness as a writer stems from a rare combination of historical perspective, technical knowledge and world outlook on the great economic and sociological issues involved in the future of the man-made fibers.

M. de Cizancourt's first article for AF (Issue No. 46) presented a lucid economic frame of reference for the whole man-made fiber movement. His present article goes further. It develops the specifics of his basic theme, analyzing the economic potentials of the different man-made fiber groups now on the world market. While his analysis needs some modification in terms of the particular U.S. consumer climate, we believe its main premises are as applicable here as they are to the European scene.

The progress in this direction is so great and man-mades now are so generally accepted that the public already rejects the type of propaganda which would present silk, for example, as the sole pillar of elegance and wool as the only notion of intrinsic value.

Such snob appeal is no longer useful in the light of the vast achievements which man-made fibers have accomplished. Each has gained its position so decisively and so unanimously that the trend is not only to adopt scientific textiles for their utility but also for their aesthetic values.

This double acceptance of man-made fibers – both decisive and unanimous – is correlated with an economic growth which is developing on a spectacular basis. The important chemical concerns are well aware of the results achieved and are unhesitatingly committing themselves to the exploitation of a favorable situation.

The launching of a new man-made fiber is accompanied by great public fanfare and as a result the textile industry has taken on remarkable life not only in Europe but everywhere in the world. This is more obvious in the so-called "Common Market" countries (France, Western Germany, Italy, Belgium, Holland, Luxemburg), where a gradual raising of customs barriers has created an increasing industrial interchange which produces a strong competitive situation.

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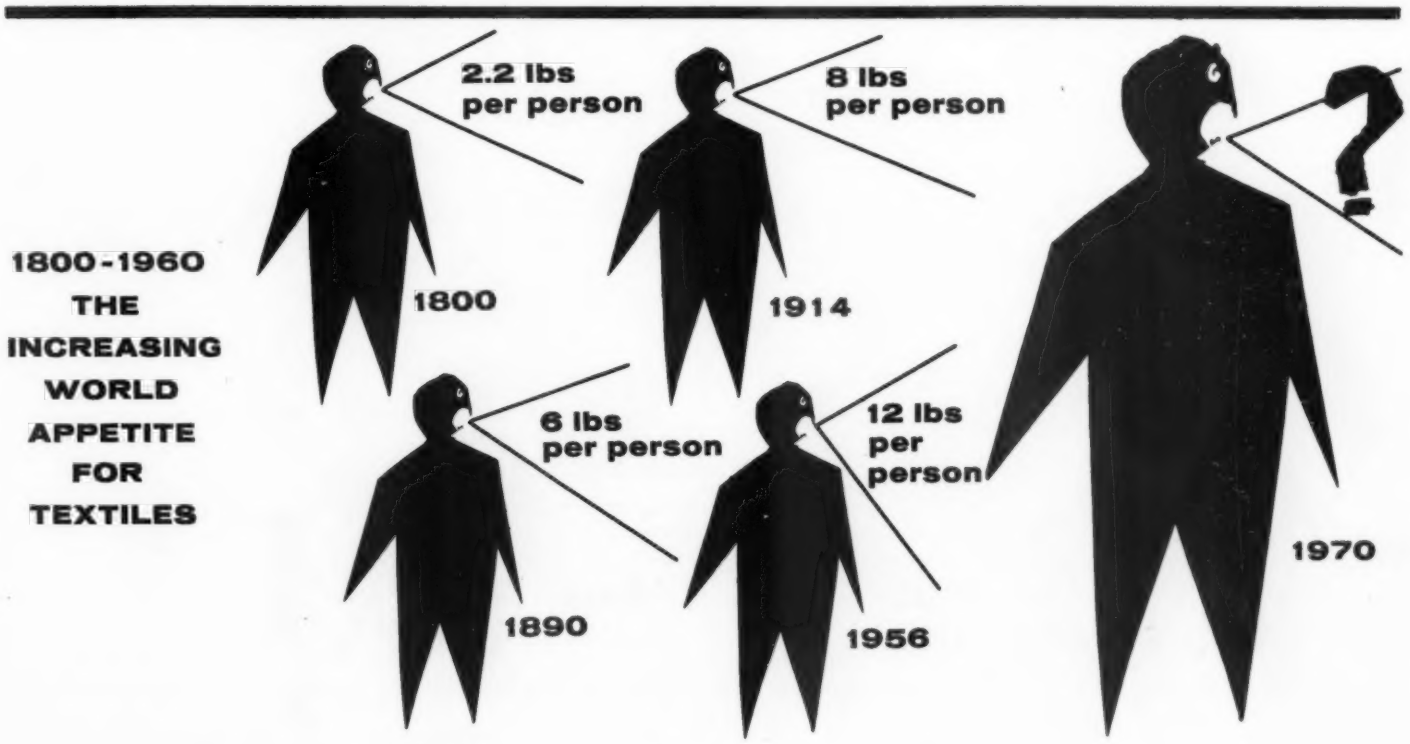
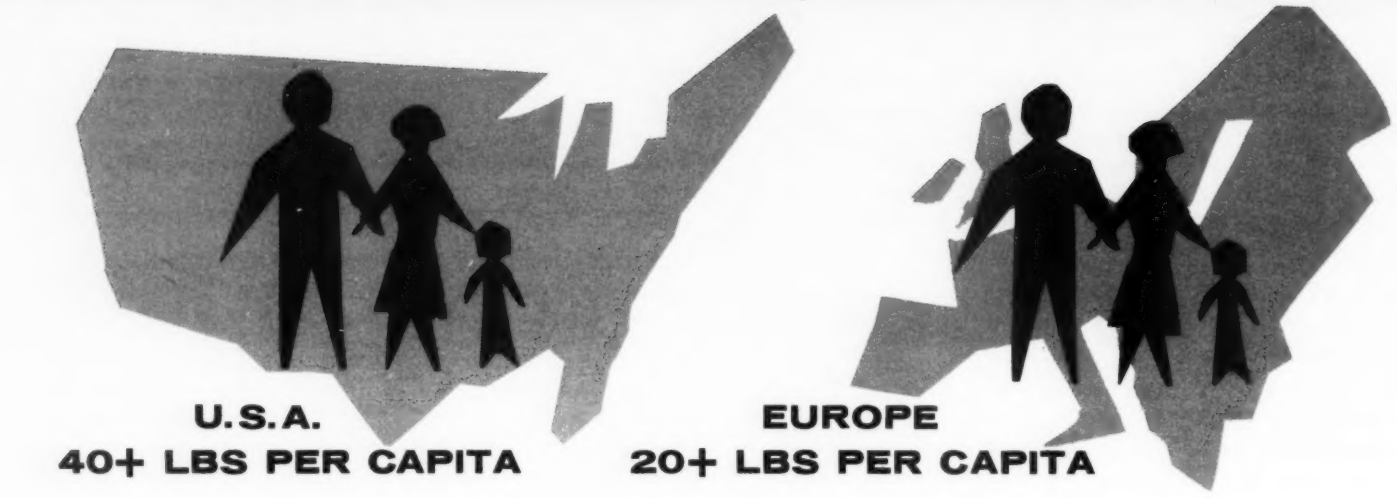
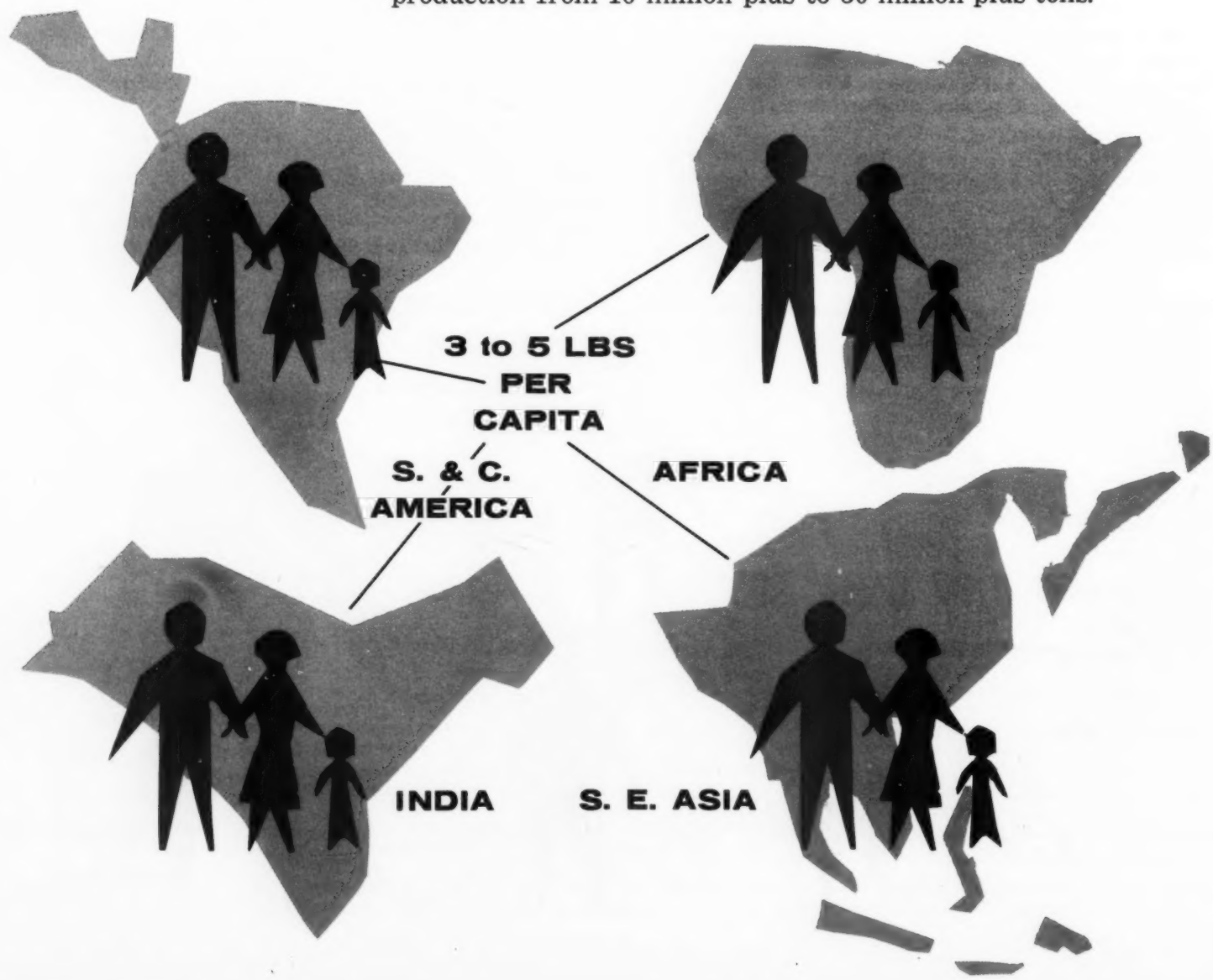


RISING LIVING STANDARDS AND PROSPECTS FOR WORLD FIBER CONSUMPTION



The present per capita rate of world fiber consumption — including the higher U.S. and European figures — is reckoned at about 12 pounds. If world per capita consumption were to rise to the U.S. average it would require an increase in world fiber production from 16 million plus to 50 million plus tons.



WHITHER FIBERS? *(continued)*

Such competition is sustained by groups as powerful as Hoechst & Bayer in Germany, Pechiney & Rhone-Poulenc in France, Montecatini in Italy, to cite only the most powerful organizations. Their combined efforts explain, at least in part, the total conversion of the public to the use of man-made fibers.

There is nobody who does not now realize the enormous sums which must be invested and risked in order to bring any new fiber into existence. This fact has deeply impressed popular opinion and has conferred on scientific textiles the kind of public respectability, value and dignity which accompanies the development of a fine and rare substance.

Finally, the entrance of the chemical companies into the textile industry is increasingly accented by the extraordinary, even dizzy total of man-made fibers which now exist in the current evolutionary situation. It affirms the growing and important role of custom-tailored fibers created by man in each instance to fulfill a precise need.

Progress and Development of Man-Made Fibers

Today the newer man-made fibers (which are completely synthetic) provide excitement for the textile industry. However, we must not forget that the earlier synthetic and the regenerated fibers such as rayon and acetate (which are primarily a reconstruction of natural substances) still play the dominant role.

If we consider the situation with objectivity, the following picture emerges:

1. Rayon and acetate, the regenerated fibers with a cellulose base, exist everywhere in the world. On the basis of volume they are *by far the most important of the man-made fibers.* The completely synthetic fibers (polyamide, polyester, acrylic, etc.) represent only 15% of world fiber production.

(continued)

THE GENESIS OF MAN-MADE FIBERS

In its simplest form the manufacture of a man-made fiber simulates the process by which a silkworm produces its filament.

The silkworm extrudes through its glands a liquid substance which solidifies into a continuous filament as it emerges and is subjected to cool air.

Chemists watching this mysterious and fascinating process conceived the idea that a man-made liquid substance, forced through fine holes, could also be solidified into a continuous filament or fiber.

From this simple idea grew the vast and flourishing industry of the man-made fibers.

There are three basic techniques by which a man-made fiber can be produced but all three are variations on a single theme:

1. THE SOLVENT METHOD. A polymer solution in a solvent can be forced through tiny holes into warm air. The solvent evaporates in the warm air and the liquid stream solidifies into a continuous filament.

2. THE WET METHOD. A polymer solution can be forced through tiny holes into another solution where it is coagulated into a continuous filament.

3. THE MELT METHOD. A solid polymer can be melted and forced through tiny holes into cool air which solidifies it into a continuous filament.

The key word here is POLYMER. This is the base or substance from which the viscous liquid is made.

WHAT IS A POLYMER?

A polymer is is the union of simple molecules or monomers, into a giant molecule (macro-molecule) or polymer. The process is called polymerization.

All fibers found in nature are composed of molecules. They are held together in a chain-like formation within a macro-molecule by strong electronic forces known as valency bonds. For instance: cellulose, which is the base of cotton, is formed by the polymerization of small, simple molecules into a larger, complicated macro-molecule.

In the case of cellulose such chemical action takes place in nature. Why not in the laboratory? This was the obvious question for scientists to ask themselves once they had learned to break a natural fiber down to its molecular structure. Why could they not duplicate or synthesize such chain-like macro-molecules from known simple molecules such as are found in wood, coal-tar and petroleum, and which they knew would react together?

As the result of much research and experimentation man-made fibers were created in the laboratory.

Most important to the whole concept was the ability to cause these macro-molecular chains to line up parallel to each other in order to create a fiber.

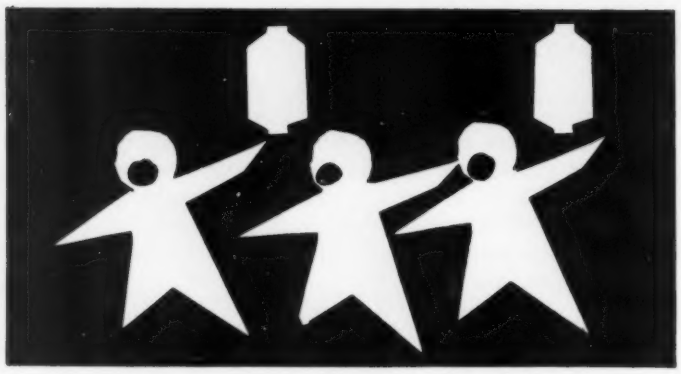
The spinneret (which looks something like a shower head) with its tiny holes, supplied the solution. It is made of iridium and platinum.

As they pass through the holes of the spinneret in their liquid state, the polymer molecules are forced into a parallel position along the length of the filament. This stretch is also controlled by the force of extrusion and by the tension under which the filaments are drawn after they solidify. Such control is important to the ultimate strength and elasticity of the filament.

This, basically, is a simplified explanation of the complicated chemistry by which man-made fibers are produced. In essence man is arranging molecules in the same way as nature arranges them, and is then converting them into flexible fibers by the same technique nature devised for the silkworm.

CONTINUALLY EXPANDING FIELD FOR MAN-MADES

New uses and new end products for the versatile man-made fibers are being continually researched and developed. Already man-mades represent one-third of the fibers used by the carpet industry and are the dominant factors in the tire industry. Industrial textiles and non-woven fabrics represent two other expanding areas for the science fibers.



Consumer awareness of textiles as never before.

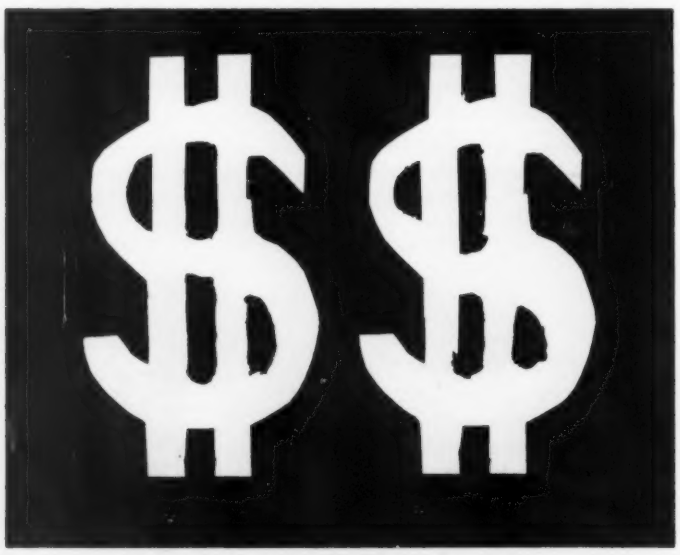
Man-Mades Have Brought Excitement and Consumer Awareness to Textiles

Not the least of the contributions made by the new science fibers is the new excitement they have brought to the textile field – an excitement and a public awareness which have done much for the welfare of the whole industry.

Most significant are the impressive advertising expenditures the chemical fiber companies have undertaken. Until the big chemical firms entered the textile business, few if any of our textile mills had either the financial resources or the inclination to sponsor national advertising programs in depth. No one was adequately telling the American consumer the full story of our textile industry. As a whole the industry was traditionally underpromoted and underadvertised in comparison with any other major segment of American business.

Today the picture is beginning to change. The textile industry can now begin to stand up and be counted. In a few years the chemical fiber producers have created an unprecedented public awareness of fabrics and an excitement with them which never existed before. It has had a healthy effect on the whole industry and has caused the producers of natural fibers and textiles to re-evaluate their traditional attitudes towards advertising and promotion.

Advertising competition and merchandising rivalry has served to keep the whole industry on its toes and this cannot help but have a beneficial effect on the future course of textiles in the United States.



Chemical fiber promotion dollars loom large.

However, it appears probable that the production of regenerated fibers (rayon, acetate) has now been stabilized at its peak. In fact since 1955 there has been no increase in their production while the production of completely synthetic fibers has doubled.

2. *This increase in production of the newer fibers does not appear to have taken place at the expense of rayon and acetate.* This important fact bears witness that synthetic textiles represent new uses and in consequence create new demands which open and enlarge the textile markets. Moreover, their arrival in the market has stimulated the producers of rayon and acetate and has resulted in a very definite improvement of quality in these products – perhaps by a re-appraisal of techniques, perhaps by the addition of complementary treatments such as texturing.

3. The newer man-made fibers have taken their place more slowly in Western Europe than in the United States. In Europe they represent only 15% of total man-made fiber production, as against 30% to 35% in the United States. However, in a very short time the acceleration in Europe will undoubtedly follow the same pattern.

For example, a particularly spectacular effort in this direction, to which the producers of the Common Market will have to adapt themselves, is the one undertaken by Bayer. In the course of the current year Bayer will raise its production of Dralon (acrylic) to 60,000 tons which is more than DuPont's production of Orlon in 1957.

4. It is impossible to make any definitive pronouncement on the future predominance of the different fibers, since new fibers are continually emerging. Nevertheless, in regard to those which exist, one can establish a worthwhile diagnosis and envisage a future perspective based on the present situation. The following points can be made:

Current Points of View

Synthetic fibers result from the ability of certain classes of plastic material to be spun. The quantity of plastic materials – a human creation and dependent upon invention alone – is practically unlimited. In consequence, the quantity of

The Fabric and the Fashion — Not the Fiber

Consumers today reflect a definite point of view. They want the utility of the man-mades but they want them in the same variety, with the same color and fashion excitement they find in garments and home fabrics of natural fibers. They do not yet find such variety and versatility and they are disappointed. This is particularly true in the field of women's fashions.

The consumer's search for beauty in man-mades leads to a corollary conclusion. The fiber producers concentrate chiefly on the promotion of their fibers but the consumer is not really interested in the fiber. Her concern is with the end result – the fabric.

Here we may draw a parallel from the numerous consumer studies made in other product fields. In prepared cake mixes, for example, it was learned that the housewife was not really interested in the ingredients which went into the mix. What she wanted to know (and see in advance) was the kind of cake she could make with the mix. As a result, cake mix packaging shifted from a description of the ingredients to a color picture of the end result – the cake.

synthetic textiles able to satisfy this or that human need is also unlimited.

It is only necessary to determine in advance (through laboratory tests) which basic material is adaptable to textiles and provides the desired qualities. It can then be produced on a factory scale. Today there exist in the world more than 600 different fibers, created by chemistry for textile adaptation. Many fail in the industrial arena, a few survive and still fewer remain to take their permanent place in economic life. Only those firms with major resources can afford to take risks on the scale required by the introduction, manufacture and promotion of a new fiber.

The Four Main Groups

From our present perspective we see that the different synthetic textiles which have achieved success belong to four distinct groups of plastic materials: the *vinyls*, the *polyamides*, the *polyesters* and the *acrylics*.

The order of their nomenclature is historic. It corresponds to the progressive steps which have marked chemistry's entrance into the textile field. It does not always correspond to the respective success of the different fibers. On the contrary, in that case it would be necessary to invert the order and give the advantage to the latest comers.

The Vinyls

The **vinyls**, first in date of textile application, have not kept pace with some of the other man-made fibers. Their role today seems to be largely that of a modest complementary material chiefly useful in blends.

The Polyamides

The **polyamides** – DuPont's nylon, polymerized by Rhodiaceta in France, Italy and in Western Germany, and the German Perlon, its rival brother and almost its twin – bear the crown in present day synthetic production, both in Europe and throughout the world. They were the heroes and the earliest protagonists of chemistry at a time when man turned passively to the sheep, to the secretion of a grub, to the fruit of an exotic plant in order to clothe himself.

The polyamides also remain the true promoters of a basic revolution which has not only changed customs, but also Western economic concepts, in allowing our civilization to resume the road of liberty and creation. But can it be concluded that, like rayon and acetate, polyamide production has now reached its peak?

While it has taken over certain markets completely, these markets cannot be extended indefinitely so that the possibilities of raising production are limited. Witness the extreme caution of such an important firm as Rhodiaceta in increasing its output.

But if the future of the polyamides in respect to quantity seems to be blocked, qualitatively it appears promising. In fact, numerous special treatments have recently been invented – such as Helanca, Banlon, Taslan – which provide an improvement of the polyamide qualities and their adaptation to use with increasing perfection.

From the same point of view the invention of Rilsan in France (a substance based on castor oil) is a prestige affair and interesting in respect to polyamides. Unfortunately, in spite of the enormous sums invested to launch this new fiber – more than fifteen milliards of the old franc – production is still too weak to have an effect on the market.

The Polyesters

The **polyesters**, which came immediately after the polyamides in the chronology of textile activity, seem to deserve and to have a similar destiny. This is indeed logical and should be applied to all new textiles. Production rises steeply when they are first launched, until they find their precise use and the market which corresponds to their individuality. This reached, their production will be stabilized according to the importance of the market. Thereafter a constant concern with the improvement of quality will be enough to maintain them.

Known in the United States under the name of Dacron, the polyesters have conquered Europe under different names –

Fiber Co-Existence — The New Art of Textile Blending

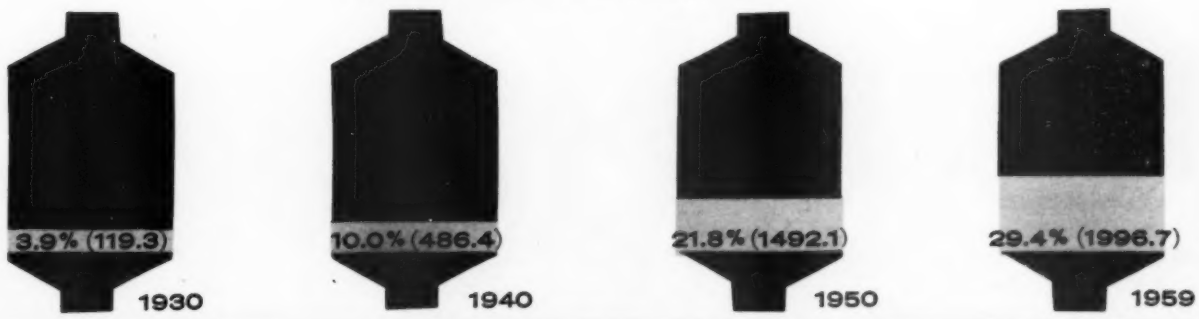
Basic to all current textile thinking is the subject of fiber blends. Most fiber producers have now accepted the fact that the successful present application of man-made fibers is in blends with natural fibers. The historically accepted "hand" of the natural fibers is still the standard used by consumers in judging the quality of a fabric.

In this sense man-made fibers do not *replace* the natural fibers. They *improve* them by compensating for nature's deficiencies in performance. The tactile quality of a fabric is still the most important factor in the consumer's mind.

It is in this area that we find the chief consumer objections to the man-mades. But the art of blending is rapidly overcoming these objections by uniting the virtues of both in one cloth. A great deal of experimentation has already been done here but this still remains one of the most fruitful directions for further development.

THE GROWTH OF MAN-MADE FIBERS IN THE U.S.

(Mill consumption figures from Textile Organon. Figures represent percentage of total fiber consumption in U.S. Figures in parentheses are in millions of pounds.)



Modifying the Basic Man-Made Fibers

Hand in hand with blending go the experiments in modifying the chemical structure of the new man-mades to bring them ever closer to the aesthetic standards of the natural fibers – and so make them ever more effective for blending. Each week brings new announcements in this field. From the chemist's point of view the scientific fibers are capable of appearing in many forms – like the magician of the fairy tales. It is claimed that all or most of the present man-mades will eventually be able to duplicate the hand of cotton, wool, silk or the bast fibers.

In the area of "miracle" chemistry it is always dangerous to underestimate man's ingenuity.

(continued)

all derived from Terylene, invented by Imperial Chemical Industries, who license it: Tergal in France, Terital in Italy, Terlenca in Holland, Trevira and Diolene in West Germany. Launched only in 1952, the polyesters have made considerable advances in the last two years and have taken over quickly and decisively in textiles for men's apparel.

Their arrival in this field has been speedier than that of nylon in its field. Their production for 1960 should be in the region of 50,000 tons in Europe but it is probable that in this state they will mark time. The European public is still unaccustomed to between-season clothing. With them, clothes for summer alone are still considered a luxury. This state of things naturally limits the employment of polyesters which may thus be fated to level off very quickly. In the United States the same situation does not obtain and the potential for the polyesters is therefore greater.

The Acrylics

Quite different is the situation of textiles derived from the last group of plastic materials to be used for yarn – the **acrylics.** It is generally agreed in Europe that they have a very good future and stand a very good chance of taking the spotlight in chemical textile production very shortly. The exceptional qualities of the acrylics – they have the virtues of wool without having its defects – seem to have made them perfectly suited to women's apparel. Here the field has especially great potential.

For the last two years in Germany, Bayer has made a spectacular effort to assure for its Dralon fiber a commanding position and has given it priority in future operations. They will intensify the effort this year by bringing the production of Dralon up to 60,000 tons. Meanwhile in Germany too, Dolan and Redon have each arrived at the production of 3,000 tons a year, as has Crylor in France.

If it is recalled that DuPont has just finished installing an important factory in Holland for the manufacture of Orlon, and Chemstrand a similar plant for the manufacture of Acrilan, it may be concluded that the acrylic market in Europe will shortly take on great importance even in the face of severe competition. The prospects for acrylics in the United States seem equally promising.

• • • •

To complete this condensed picture of man-made fibers a few additional observations may be made:

1. BLENDING. The orientation is more and more towards blending in textiles because of the remarkable enthusiasm this has generated both with the trade and with the public. This is far more than a technical and commercial device. It is the birth of a new textile art.

2. PUBLIC INTEREST. There is increasing participation of public opinion in the present efforts of the textile industry which are based on chemistry. Such participation is on the level of a partner in a common enterprise. Two facts support this observation.

First, a certain number of informed people, conscious of the difficulties experienced by the consumer in the face of ever-expanding new fiber production, feel the need to set up pilot shops where all the new fibers will be exposed and demonstrated to show their special qualities and end uses.

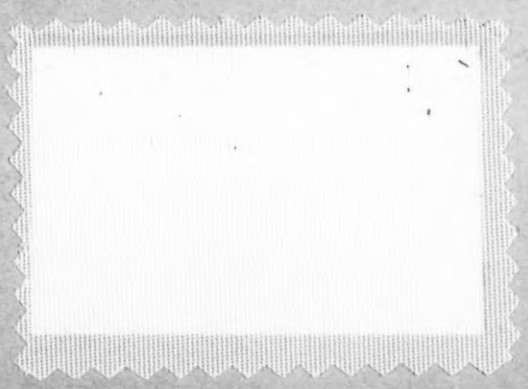
Second, there is also a movement to set up an experimental center for plastic materials, where the qualities of each material will be tested in a laboratory in order to find its immediate field of utility and its best uses. Such institutions, created apart from the producers but with their participation, would tend to foster and maintain a direct contact not only between the producers themselves but also between them and the consumer.

These developments signify that the extraordinary achievement brought to the textile industry by chemistry is not simply a technical interest; from now on it forms an essential part of the total picture. – Charles de Cizancourt

THE TRICOT DRESS SHIRT

A new concept in wash-wear business shirts for men has been developed through the use of man-made fibers in knitted shirting fabrics made on tricot machines

The striped shirt shown above is made of wash-wear tricot fabric in exact collar sizes and sleeve lengths. This one is by Arrow. Similar shirts are now produced by Manhattan, Raab-Meyerhoff and Jayson.



The fabric swatched above is representative of the Dacron-nylon fiber blends now being converted into tricot shirting fabrics for men by such mills as Deering Milliken, Burlington, J. P. Stevens and Fischer.

THE WORD "tricot" is derived from the French verb "tricoter," meaning "to knit." Tricot fabrics are warp knits constructed from single strand or filament yarns – as contrasted with woven fabrics which are usually made from spun yarns of short fiber lengths. Tricot is a fabric of fine, close construction and generally has good dimensional stability.

Today, tricot is usually associated with women's underwear, knitted from nylon yarns. However, the versatility of the construction lends itself to many other end uses both in apparel fabrics and in fabrics for the home. The field for tricot is beginning to expand in these directions due to the efforts of the newly formed Tricot Institute of America.

One of the most interesting of the new developments is the tricot business shirt for men. Long before wash-wear clothing reached its present status, shirt manufacturers conducted extensive experiments to develop a knitted fabric for men's dress shirts which would offer the comfort and crease-resistant performance qualities inherent in the knitted sport shirt. However they could never achieve sufficient dimensional stability in the fabric to guarantee exact collar sizes and sleeve lengths after washing.

The problem has now been solved through special shirt construction and primarily through the use of dimensionally stable tricot fabrics made from Dacron and Dacron-nylon blends. Successful fabrics now on the market are either all-Dacron or blends of 91% Dacron with 9% nylon. At least four major mills are now producing such fabrics and at least four manufacturers are marketing tricot business shirts.

Mills Making Tricot Shirting

The mills presently involved are Deering, Milliken, Burlington, J. P. Stevens and Fischer. The manufacturers are Cluett, Peabody, Manhattan, Raab-Meyerhoff and Jayson. Though production is still on a limited basis, initial response to these garments by both retailers and consumers has been excellent and there is every indication that the tricot business shirt will rapidly become a staple in the wash-wear category.

The advantages of tricot for the basic dress shirt are obvious. The knit construction offers comfort and makes the shirt naturally crease-resistant so that it requires no ironing after washing. The knitted texture also gives the fabric excellent porosity in lightweight summer garments. To the natural virtue of the construction has been added the performance virtues of filament Dacron and nylon yarns which absorb very little moisture and can therefore be easily drip-dried after any type of laundering – either by hand or machine. Finally, the durability of Dacron and nylon guarantees extremely long life to the garments.

Women are well aware of all these virtues because of their long experience with nylon tricot underwear. They are therefore pre-sold on tricot and will readily recognize the advantages it brings to men's shirts. And men should have no difficulty in transferring to the knitted business shirt all the comfort and carefree qualities they have come to associate with the popular knitted sport shirt.

Textile Testing

Security for the consumer is the keynote of all textile testing, a recent development which has not yet been appreciated by the public

A VERY IMPORTANT, yet still largely unknown section of today's textile industry is devoted to textile testing. Testing begins the moment a textile fiber has left the spinneret or been harvested in the field, and it continues through every stage until the moment when the goods are placed for display on the nation's merchandise counters.

Testing on today's scale is rather new. In the old days the buyer and the consumer had been dealing with the same four fibers and the same three weaves since childhood, and his knowledge of the good and the bad in them had become almost an instinct. Today this is no longer sufficient to cope with the complexity of textiles available.

In the majority of cases those engaged in testing seldom think about the consumer, yet in the final analysis it is to the consumer that all their diverse efforts are directed. Take the cotton buyer for a spinning mill. He will tell you that he is protecting himself and his customers against accidental or intentional variations in fiber quality. The spinner himself will tell you that evenness and strength are the most important things for the weaver and that he protects his reputation and his salesmen by offering only the finest quality. The weaver who tests his product or the converter who tests his dyes and finishes will tell you that in these days of competition . . . and so on.

But the consumer – the final object of all this care – is likely to tell you that he is unprotected, that he just has to take his chance in the market, that since he is compelled to buy somewhere, the store is only interested in attracting his attention or competing pricewise with its competitors.

This situation exists only because he is almost totally unaware of the intense activity that has mushroomed in the testing field. He pays attention to the tags, shields of quality, special labels and other merchandising aids but he knows little or nothing of what goes on behind the scenes.

Today even the professional buyer of textile merchandise must turn to the testing laboratory in order to know whether the composition of a fabric is as it is represented and whether it will perform as claimed. His finger tips are no longer adequate to tell him the percentage of different fibers in a fabric.

It may be worth illustrating this by a single example. The J. C. Penney Company buys some five million dollars worth of merchandise every single working day in the year and that merchandise has to sell. The company's testing laboratory provides its departments and buyers with a means not only of checking the specifications of goods, of verifying the actual performance expected of them, of analyzing the trouble in rare cases where merchandise is returned, but also of offering a valuable point of departure for cooperation with the manufacturer in perfecting already saleable goods.

To service their own departments and protect their millions of customers, this company's testing laboratory regularly operates not less than some thirty-five standard tests from intensive laundering to matching moth-resistant fabrics against the most voracious larvae known. By such means they are able to offer goods which give unqualified service, within their particular category, all the way down the line.

The consumer seldom knows these things because few people have told him about them. It is clearly time the textile industry took stock of the testing services which have developed in the back room overnight, and began to put it to use in building up the consumer confidence which their service to the public deserves.

In the sections which follow we describe and illustrate some of the more important testing operations now used in the textile industry.

Testing is done in order to: 1. Measure efficiency of performance. 2. Disclose weakness and flaws in structure. 3. Determine quality from raw material to finished product.

Testing may be done at various stages in the production of fabrics and is usually divided into three major sections: testing in the mill, simple laboratory testing, and advanced laboratory testing.

The various tests which are made for composition, construction and performance of textile materials cover a wide range. They are usually classified into three groups: physical, chemical and optical.

Physical Tests

Physical tests include: 1. Staple length, grade and quality of fibers. 2. Size, strength, ply, twist and quality of yarns. 3. Construction, weight, strength, weave, abrasion, shrinkage and other important properties of fabrics.

Chemical Tests

Chemical tests include: 1. Sizing determinations. 2. Quantitative analysis of fiber content. 3. Identification and analysis of special finishes. 4. Extraction analysis. 5. Various types of color fastness tests. 6. Determination of causes of defective materials.

Optical Tests

Optical tests include:
1. Qualitative and quantitative fiber analysis. 2. Wool grade. 3. Photomicrography. 4. Measurement determinations. 5. Inspection of defects.

Standard Atmospheric Conditions

Standard atmospheric conditions for testing textiles are: in moisture equilibrium with a standard atmosphere having a relative humidity of 65% (+2%) at 70°F. (+2°F.)

Testing the Finish

Each of these finishes can be tested for their effectiveness or lack of it.

1. Abrasion resistance.
2. Absorbency.
3. Antiseptic qualities.
4. Antistatic qualities.
5. Color fastness.
6. Crease resistance.
7. Crispness.
8. Drapeability.
9. Dry cleanability.
10. Dullness.
11. Durability.
12. Flame resistance.
13. Gas fading inhibition.
14. Ironing (minimum).
15. Light fastness.
16. Lintlessness.
17. Luster.
18. Mildew resistance.
19. Moth resistance.
20. Oil resistance.
21. Perspiration resistance.
22. Scroop.
23. Shrinkage resistance.
24. Slip resistance.
25. Softness.
26. Stain resistance.
27. Stretch and sag resistance.
28. Washability.
29. Water repellency.
30. Wilt reduction.

A yarn inspection card winder. This is a portable machine for winding yarn on cards at uniform spacing for easy visual inspection.

Carpet wear tester. This is an instrument specifically designed to measure the comparative wearing qualities of different carpetings.

Knit shrinkage gauge. It measures on a multi-directional basis the shrinkage in a knitted fabric and its ability to recover.

Air permeability tester. With this instrument it is possible to measure, under controlled conditions, the flow of air through cloth.

DEFINITIONS of TESTING TERMS

COLOR FASTNESS. The ability of a material to resist alteration of shade by:

Acids	Fulling
Alkalis	Light
Atmospheric Gases	Perspiration
Carbonizing	Pressing, Dry
Chlorine	Pressing, Wet
Cleaning, Dry	Salt Water
Cleaning, Wet	Washing
Crocking	Weather

COMPOSITION OF MATERIALS. In textiles, this refers to the kind and amount of various fibers present in a textile material. It is determined chemically and microscopically.

CONSTRUCTION OF FABRICS. This is thread count or threads per inch in both warp and filling. It may also include yarn size and twist determination.

EXTRACTION ANALYSIS. Finishes or other materials are removed from fabrics by means of solvents such as water and carbon tetrachloride or other organic solvents. The extracted substance is isolated by evaporating the solvent. It may then be identified or the percentage determined.

GRADE (FIBER). This is the class into which cotton, wool and other fibers are classified according to length, diameter, evenness, strength, color of fiber.

PHOTOMICROGRAPHY. Producing magnified photographs of objects or surfaces.

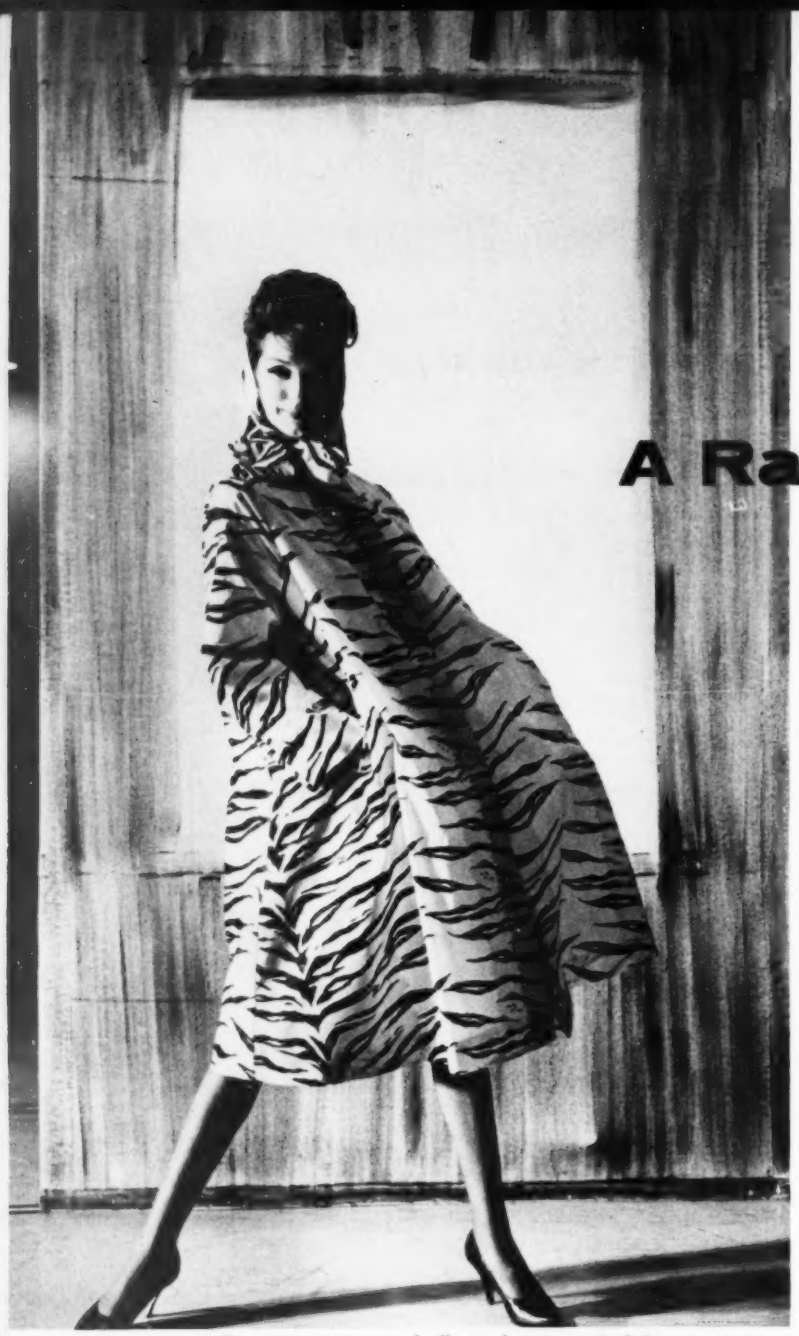
PLY. In yarns, ply refers to the number of single yarns which were twisted together to make up the particular yarn being examined.

SIZING. Non-fibrous matter which is added during the weaving or during the finishing of a fabric or yarn to impart a definite characteristic to the yarn or fabric.

STANDARDS. These societies, agencies and specifications are among those whose standards and methods of testing are followed on all applicable materials:

Military Specifications (Army, Navy, Air Force, Quartermaster Corps, Medical Corps, Ordinance).
Federal Specifications.
Commercial Standards (U. S. Dept. of Commerce).
The American Society for Testing Materials.
American Standards Association.
American Association of Textile Chemists & Colorists.

YARN SIZE OR YARN NUMBER. The size of a given yarn is expressed by a number based upon the relation between weight and length.



The tiger print coat of silk surah is typical of the eye-stopping rainwear for which Lawrence of London is famous.

A Raincoat is for Rain . . .

. . . and now for many other more glamorous occasions since Lawrence of London transformed a utilitarian garment into a fashion spectacular with many unexpected fabrics

Norman Lawrence, now an American, took the company name from his birthplace. Adele, a Bostonian, reveals none of that city's famous conservatism in her brilliant styling.

ADELE AND NORMAN LAWRENCE are modest people and they shrink from the thought of considering themselves pioneers. Yet if any two people are responsible for the transformation which women's raincoats have undergone in this country during the past decade, this husband-and-wife team deserves the credit.

Examine the photographs and the fashion sketches on these four pages. Then touch the fabric swatches which accompany them. This is a far cry from serviceable cotton poplin; an even farther cry from yellow oilskin and black rubber. These fabrics and these illustrations are representative of the Lawrence of London line, but they do not by any means exhaust the wide diversity of fabrics and the dramatic range of models which have set a new trend in the women's fashion industry.

Psychological Styling

The Lawrence approach to rainwear is based on a sound psychological principle. Rainy days are dreary days and a bright and shining raincoat is a wonderful antidote to the blues, particularly in the brilliant colorings which have become a hallmark of Adele Lawrence's styling.

It was in England that the idea of making a colorful and high fashion raincoat first occurred to the Lawrences. Living there during the war years, they became conscious of the sensible but somewhat unimaginative qualities of the British woman's "Mac" and determined to do something about it. Back in America in 1947 they produced their first model — out of a spectacular black taffeta, woven with red, blue and green Lurex yarns. Bonwit Teller became their first customer and this original coat became an outstanding success. Bonwit Teller alone sold six hundred units.

From this modest beginning the Lawrences have developed a high fashion coat business with most of the leading women's specialty stores in the country. In seeking new ideas and new fabrics for raincoats they adapted the now classic silk broadcloth, a special 11½-ounce worsted jersey, wool felt and exotic printed velveteen. They have produced coats out of luxurious

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The coat on the opposite page is one of Lawrence's spectacular floral prints, this one an imported warp-printed silk taffeta in brilliant colors, with a hat to match. The swatches reveal Adele Lawrence's uninhibited approach to rainwear styling. The tortoise shell pattern is a lacquered rayon imported from Bucol in Paris. The stained glass design was printed by Menke Lieberman on Crompton Richmond's velveteen. Other key fabric resources include Mayar, Stehli, Lebanon, Erlanger Blumgart, G. Hirsch, Onondaga, Gourdon, Blumenthal, J. P. Stevens, Moygashel and Liberty of London.

The use of worsted jersey for rainwear is unexpected, yet it has been a popular fabric in the Lawrence line. Treated for water-repellency, it makes the handsome coat shown here with matching "pixie" hat.

Another of the floral prints which have become a hallmark of the Lawrence line, this one a theatre coat in warp-printed silk ottoman.

RAINCOATS *continued*

silk ottomans, pure linens, intricate warp-printed silks, wool plaids and even such unexpected fabrics as organdie, brocade and lamé. Such fabrics would have been unthinkable for rainwear before the Lawrences came on the scene. All these fabrics are specially treated to be water-repellent and a further fashion fillip has been added through matching hats and striped umbrellas to coordinate with the colorful stripes with which most of the coats are lined. Many of the coats also carry milium or alpaca linings for year-round wear.

On a different level, Lawrence of London has made a significant contribution to the economics of the rainwear industry. Not only have they revived consumer interest in rainwear and so benefited the whole field, but they have succeeded in trading up raincoats. The average retail price of their coats is between $70 and $80 and this has been achieved in a market which previously considered $25 a high retail price.

The reason for their success, of course, is fashion. Lawrence coats are no longer simply raincoats serving a utilitarian function. They are many-purpose coats – for travel, for Spring, even for evening wear – as the illustrations on these pages show. The Lawrences have added a new and brilliantly-colored chapter to the book of the American fashion industry.

children's rainwear, too . . .

Children's rainwear is a growing attraction in the Lawrence line and many of their garments are made in matching sets for mother and daughter. They are equally charming for all ages. The inspiration for this development undoubtedly came from the Lawrence's 6¾-year-old daughter Vicky, shown on the left and modeling a leopard print silk (Mayar) coat at the fashion show where she was naturally the chief attraction for buyers and press.

Worsted jersey, waterproofed and milium lined, makes this petite-sized coat and matching "pixie" hat a year-round outfit.

Serviceable Dacron-cotton poplin is lined with worsted jersey for fall. This one has contrasting trim and zippered pockets.

Pure silk broadcloth, a Lawrence classic, is self-lined and has elaborately pleated collar and cuffs. Beret to match.

Another silk broadcloth is fully lined with siri canvas to keep its flared shape. Matching cloche hat and shoulder bows.

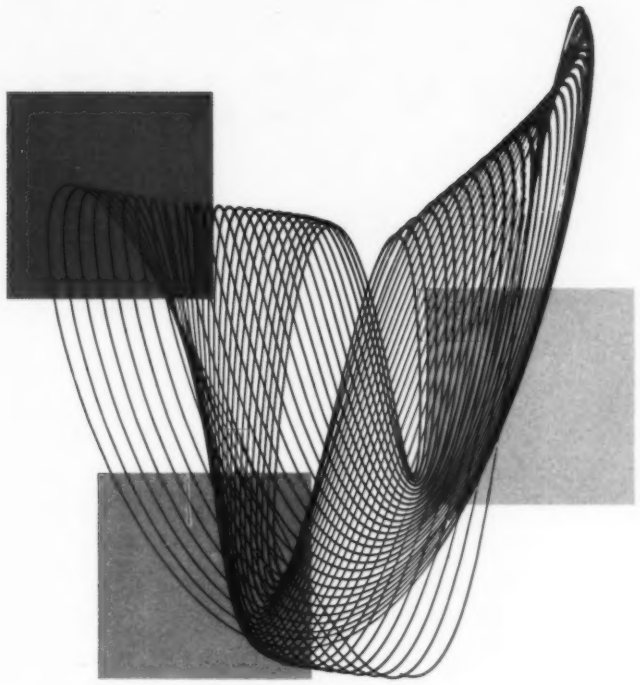
1 The first color – *Turquoise* – is printed on the white ground, leaving uncovered areas where colors will fall in succeeding steps.

2 The second color – *Violet* – falls on both the white ground and the Turquoise. Where it covers Turquoise, it forms a third color.

Four stages in the Multi-chromatic textile printing process show the progression of colors as they are applied to cloth by the continuous roller method

3 Now the *Orange* color is printed, creating additional tones where it falls on the Turquoise and the violet previously printed.

4 Finally, the *Olive* is applied. It covers the remaining white ground and creates further color blends with the other shades.



A NEW DIMENSION IN ROLLER PRINTING

The 4-color process for printing on paper has at long last been closely approached on fabric through the application of Cibacron reactive dyes by Trichromatic textile printing

TEXTILE PRINTERS and converters have long been tantalized by the idea that it should be theoretically possible to reproduce on fabric the full range of color tones in an art masterpiece – say a painting by Gauguin. However, in practice the theory has always run afoul of many technical problems. When one color was printed on top of another in the attempt to produce a third color tone, it resulted in a muddy area entirely lacking in the brilliance of the original art work. Many different rollers or screens were required even *to approximate* the artist's palette and the whole procedure often became economically impractical.

The 4-color process in paper printing uses the primary colors yellow, red and blue – plus black for depth and intensity of definition. Each of the primary colors is separated out photographically by the use of filters. Thus, when one color is printed over another color it produces a third color. The full color reproduction is thus produced by only four separate half-tone plates.

A closely related principle applies to the Trichromatic Process now sometimes known as the Multi-chromatic process because of a recent extension of the principle to the use of four or even more rollers. This is the process which makes possible full color reproduction on textiles with a limited number of rollers engraved in half-tone.

In this process, special roller engravings achieve graduated tones of each color and continuous color tone mixtures much as in paper printing. In addition, the Multi-chromatic process is not necessarily limited to the three primary colors – yellow, red and blue – so that a wide range of color combinations become possible in carrying out the designer's concepts.

But the Trichromatic process would remain a theoretical will-o'-the-wisp without the right color dyes. If direct dyes, vats or pigments are used in this process, the results are unsatisfactory from one point of view or another. The dyes which have now made the whole process commercially practical are the Cibacron reactive dyes, developed by CIBA and already widely used throughout the world in other types of textile printing. They are based on a new scientific principle involving a chemical reaction between the color and the fiber from which the fabric is woven.

Through the use of the Cibacron reactive dyes it is now possible to achieve *predictable* shades when one color is printed on another. There is no guesswork. The printer knows exactly what he will get. Moreover, the Cibacron dyes do not change color when applied. They do not need to be "developed" before the true color emerges. They remain the same color throughout the printing process so that it is possible to see what effect is being achieved at each succeeding stage.

From the technical point of view the Cibacron dyes blend well, they give good coverage, they are clear and brilliant in tone, they do not stain back on whites during washing and they are fast and non-fading.

This printing process thus offers exciting possibilities to the textile stylist and designer. The designer no longer needs to be limited by circumscribed areas of flat color. Every nuance and shading of the artist's original design can now be faithfully reproduced and the limitations to blending one color with another are now removed.

To demonstrate the possibilities of this new process we have swatched four stages in the preparation of a print with four primary colors. The design is by Belding-Corticelli and the printing by Allied Textile Printers of Paterson, N. J.

MIDTOWN MAVERICK
in the
HOME FABRICS FIELD

Fuller's Dolph Moore has broken with tradition to become a pace-setter in an industry full of preconceived ideas about what the public will buy

IN THE NEW YORK home fabrics market there are two distinct groups. There is the "Uptown" group with its nucleus around 53rd Street and there is the "Midtown" group which centers about Fifth Avenue and 29th Street. Traditionally the two have been worlds apart in taste.

It is always dangerous to generalize about taste but on the whole it is possible to say that the uptown group – which caters largely to decorators, architects and designers – has the simpler and more sophisticated approach to design. This is partly because of the type of people who operate in this area and partly because the decorator houses are able to produce fabrics in relatively short runs and at relatively high prices. The midtown group, by contrast, caters to the volume department store, the national chain, the big jobber and the local decorative fabrics store. It is dedicated to long runs of fabric and popular prices.

Traditionally the midtown market has felt it must give a lot of value for money spent and this is interpreted to mean that it must over-decorate its products, must give them over-statement rather than under-statement. Until quite recently most midtown converters did not feel they were doing justice to a pattern unless they designed it with as many as nine to twelve separate colors in addition to metallic gold or silver. The problem of creating six or more different color combinations with such a pattern was therefore compounded and the task of the colorist was frequently a literal nightmare during the striking-off period at the mill. In such a situation it was inevitable that many color combinations lacked both logic and harmony and were therefore failures.

However, the midtown converter seems able to take this in his stride, even to the point of making jokes at his own expense. It is not unusual to hear such a man say that he is in the business of producing close-outs. And he can often afford to joke because he sees himself as a gambler and the ace he holds up his sleeve consists of the two or three patterns which are successful, those out of which he gets "mileage."

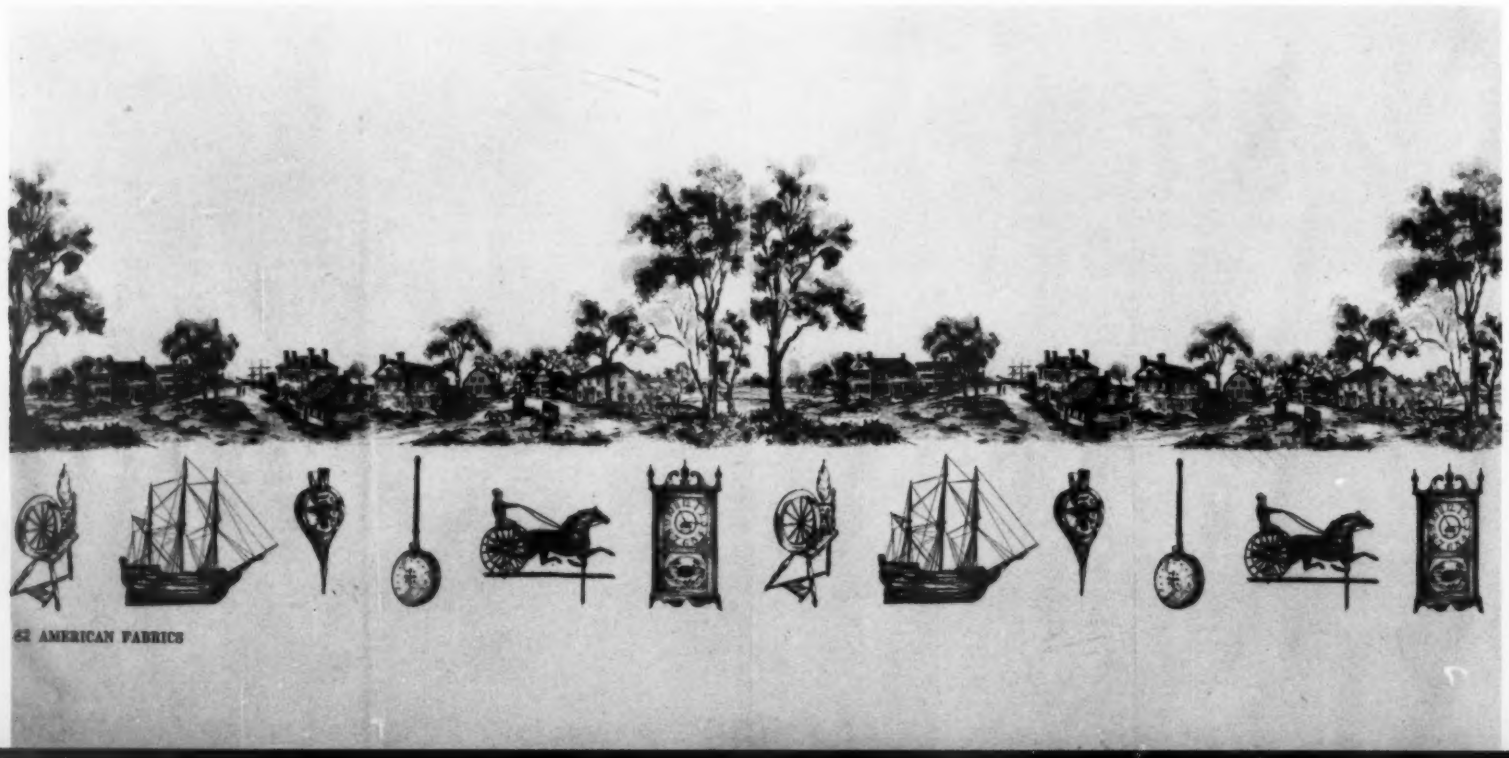
Such patterns often enjoy a run of a million yards and more and a number of midtown converters have survived and even prospered on the strength of no more than two or three such best-selling designs.

The more sophisticated practitioners in this group often tend to deprecate their products. They will tell you: "This is not my taste but that's what the public wants." Whether or not this is true is increasingly debatable but it has resulted in the deliberate production of fabrics which are frankly referred to as "Schmaltz." It has also resulted in such cynical phrases as "Bronx Renaissance" and "Great Neck Renaissance" to describe the lush designs turned out by the midtown market.

The artists and designers who labor in this over-decorated vineyard are even more cynical than the converters and the stylists who employ them. There is seldom any conviction in their work. Working as they do in an industry which puts great effort into the production of complicated printed fabrics, such designers will often tell you that they hate prints. In

(continued on page 64)

In the volume field Fuller is responsible for the promotion of the large scale continuous scenic design. The most recent addition is "Roxbury" ***(Below)***. The photograph shows two widths of cloth joined but more can be added.



Dolph Moore on the Styling and Promotion of Home Fabrics

"Our market often compels us to produce merchandise which is frankly 'commercial.' I may begin with a pattern which would be acceptable to the uptown decorating houses. We will then tailor this pattern, add to it, you might almost say . . . emasculate it . . . until it is no longer acceptable to the sophisticated eye. At that point the pattern no longer meets my private standards. But it does meet my 'commercial' standards. I recognize that there are two sets of standards involved here and it is my hope that eventually they will mesh."

"I believe popular taste is improving. It is now possible to sell to the mass market the type of design which was once considered the province of the uptown decorating houses. But this rise in public taste moves in slow stages and you can't get too far ahead of the crowd. You can only move ahead a little at a time."

"In the home fabrics field, the patterns of merchandising are changing today. You can no longer simply create a line and let it take its chances in the market. Today, you must go over the head of the buyer and the jobber. You must speak directly to the ultimate consumer. Many buyers have a limited frame of reference and they will resist anything they don't understand. But if you pre-sell it for them through visual and exciting promotion material, there's a better chance they'll go along with you."

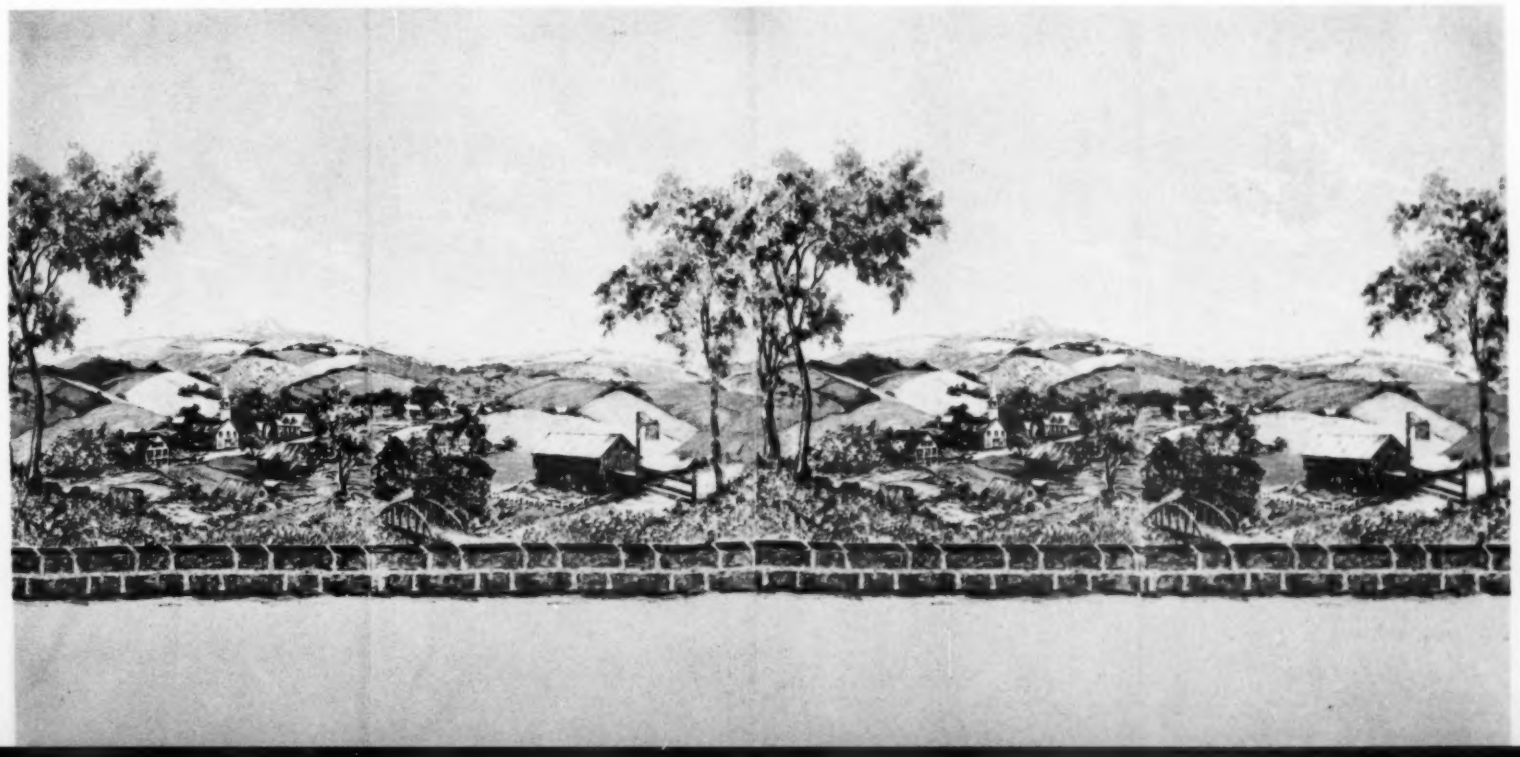
"If a stylist allows his salesmen to dictate his styling, he will never do anything new. Except in a few cases their standards are last season's successes and on the whole they can't project ahead. That's why I believe it takes tremendous ego to be a successful stylist. You've got to believe you are right and then you've got to convince your salesmen to go along with you. Here's an example of what I mean. In our field it used to be considered axiomatic that you couldn't sell designs with birds. Yet one of the most successful panel designs in our line consists of nothing more than two very large and very carefully drawn birds. It took ego to put those birds in the line."

"I buy designs on the strength of the first impression they make on me. I never try to rationalize myself into buying a pattern. As a result I have a small line. I will not arbitrarily build up a line just to fill in numbers. Each design must have its own intrinsic reason for existence."

"If I have any mission at all as a converter – other than creating a saleable line – it's to broaden the base for good taste in home furnishings fabrics. I aim my designs at the growing middle class because I believe this is the audience which is trying to raise its design sophistication along with its standard of living. In this I am fortunate to have the complete and wholehearted support of Dan Fuller, the head of our division."

"The biggest risk a converter can take is to produce a staple design. There are ten other converters competing for that kind of business and there's always someone who can do it cheaper."

One of Dolph Moore's biggest successes was the continuous scenic called "Rolling Acres" *(Below)* This was frankly designed to capitalize on the popularity of the Grandma Moses vogue but was executed with more finesse.



MIDTOWN MAVERICK

(continued from page 62)

their own homes they tend to use either solid colors or pure "uncontaminated" white. There may be a degree of schizophrenia involved here but the home fabrics field has no monopoly in this area and it is not our purpose to discuss the psychiatric aspects of designing for the volume market.

The purpose of this sketchy and necessarily over-simplified picture of a complicated industry is that it throws into high relief the contributions made by Dolph Moore, who heads the Fuller Decorative Fabrics division of J. P. Stevens.

Dolph Moore is a young, rather shy and modest man who is at the same time unusually articulate about his aims and his values. What is unique about him is that his standards are those of 53rd Street but by some strange alchemy he has been able to transmute them and make them acceptable to 29th Street. In the five years since he started Fuller's decorative division he has broken several of the traditions cherished by his peers and has set a pace for innovation which is the envy of the industry. In all his activities he has had the active support of Dan Fuller, head of the parent company, and this has been a tremendous asset.

What he has achieved is no sleight of hand. It is based on careful calculation, on organized planning – plus an intangible instinct for the shift in cultural patterns and the timing which makes a design acceptable to a wide public.

Innovations in Home Fabrics

Under Dolph Moore's direction, the Fuller decorative division has introduced a number of innovations into the midtown home fabrics market. The following are perhaps the most significant:

1. In a market which was then oriented to woven textures and solid colors, he revived interest in prints by reducing the number of colors used and thus creating a "monotone" look which made it easy to fit his prints into the decorative scheme of the modern home. He also placed strong emphasis on modern design.

2. In the volume market he was the first to exploit the possibilities of the automatic screen printing machine. In this market the emphasis has traditionally been on roller prints.

3. Through the flexibility offered by screen printing he was able to reintroduce the large panel design and thus set a new trend in the volume field. And one of his major efforts in panel prints was a huge modern design based on the work of the painter, Mondrian. For the midtown market this was really avante garde – yet it was a success.

4. In order to promote his large panel repeats he reproduced them in miniature on the actual fabric, following the example of the wallpaper industry. He also used color photographs (perhaps for the first time in this market) to show how his panels would look in actual room settings.

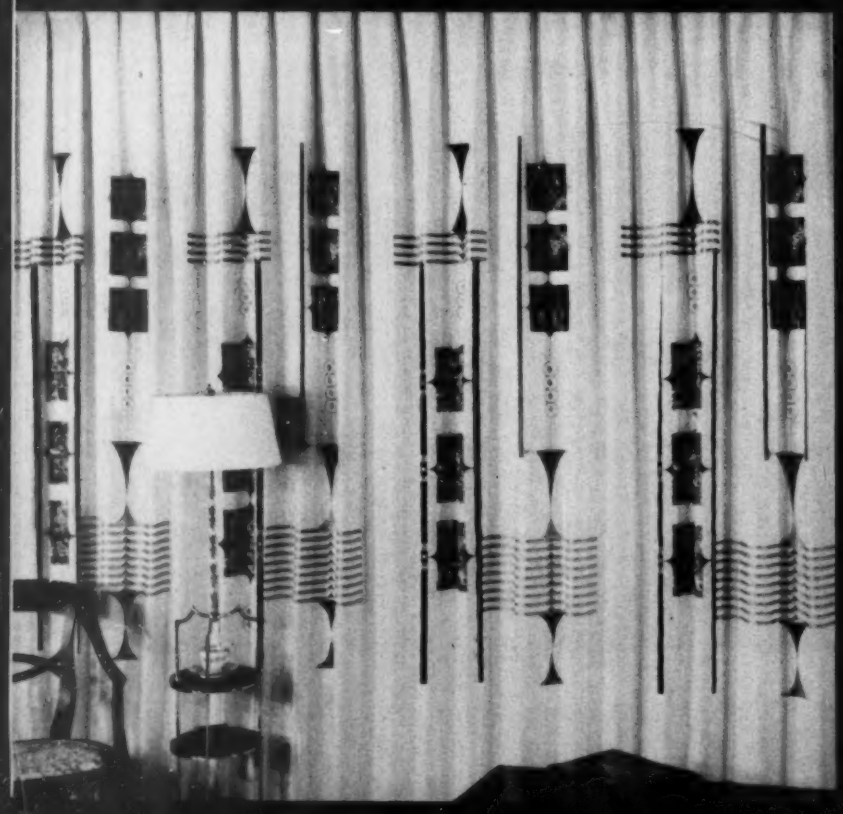
5. He introduced the large-scale continuous scenic design which covers two widths of fabric. Carrying this idea one step farther for wall-to-wall drapes, he developed the "controlled" panel design which consists of two printed widths with coordinated solids.

6. Above all he placed the emphasis on promotion in an industry which had previously felt little need to function on this level. He provided his salesmen and his outlets with effective merchandising tools. He pre-packaged his line. This had the effect of reducing the resistance of the buyer by speaking directly to the consumer. And this, in turn, made it possible to introduce a simpler type of design approach which would probably not have been acceptable without the packaging which accompanied it.

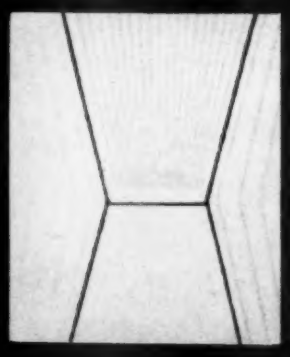
In themselves, no one of these accomplishments sounds especially impressive. Some of them have long been used by uptown decorative fabric houses and most of them are standard practice in the fashion field. Their significance lies in the fact that they were all departures for this particular branch of the fabrics industry. They all broke with tradition and they have all paid off handsomely for Fuller Fabrics.

As usual, it is hard to argue with success and in the neighborhood of Fifth Avenue and 29th Street Dolph Moore's success has been responsible for a good deal of re-evaluation about design and about public taste.

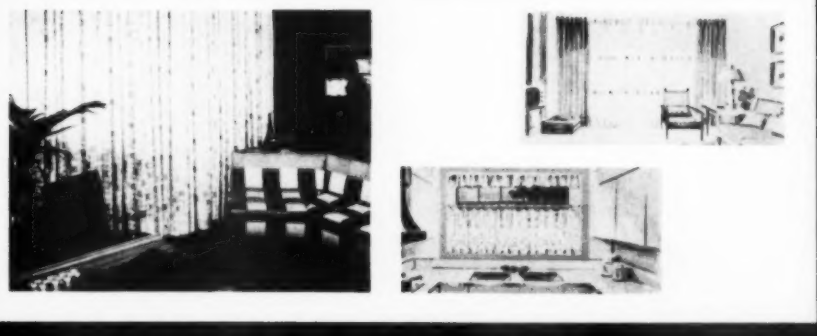
Typical of the "modern" genre in the volume field is the panel design "Gauntlet" *(left)* which is a best seller. "Pheasants" *(right)* is a controlled panel sold with matching solid ground for wall-to-wall drapery treatment.



Dolph Moore calls this panel his "Mondrian" design. Promoted under the name "Symphonic," it represented a radical departure in the volume field and spawned a host of imitations. It also triggered the use of burnt orange colors.



Pigment white on Dacron-cotton sheer . . . a radical step in the midtown market.



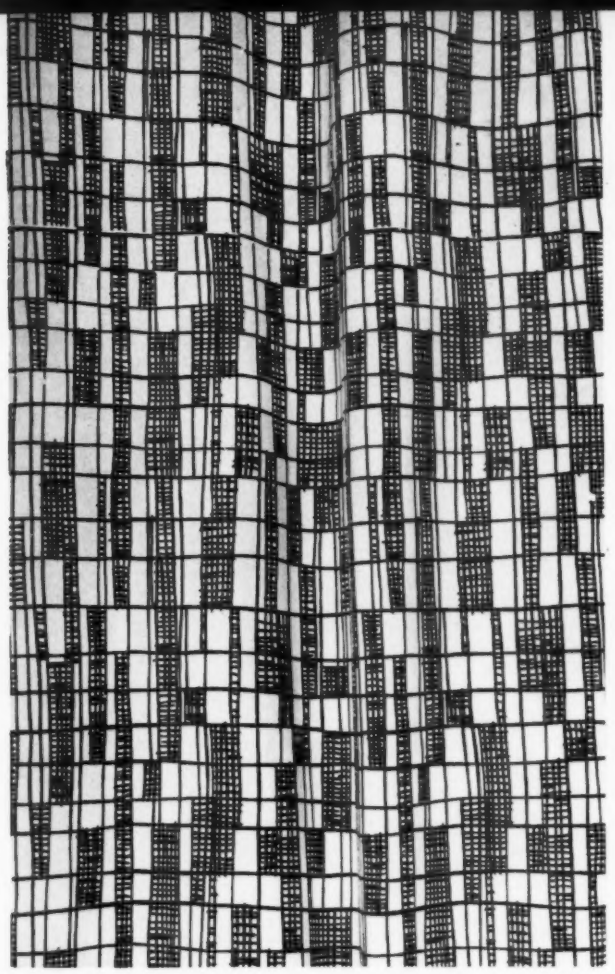
A page from one of the display books which Fuller prepares for each new line. This type of packaging, though expensive, has encouraged buyers to try many new designs and promotions they would normally turn down.

Another pigment print on a sheer cloth. Fuller's market tends to resist such ideas.

Yves Cuvelier (with beard) is shown at a recent French exhibit with Pres. M. Coty, (right).

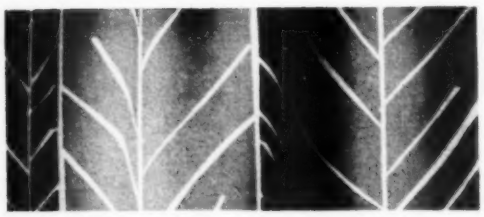
GALLIC MONOTONES

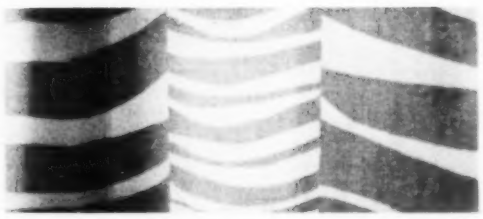
The home furnishings fabrics shown on these pages are the work of a French designer and converter — Yves Cuvelier. His modern, geometric approach to decorative prints reflects an interior design direction which is becoming increasingly important in this country. While M. Cuvelier often uses bright color in his prints, the black-and-white reproductions shown here reveal their adaptability to the monotone look which is gaining favor among American interior designers. In Europe, Cuvelier designs have been widely used for both home and office and especially for transportation interiors.

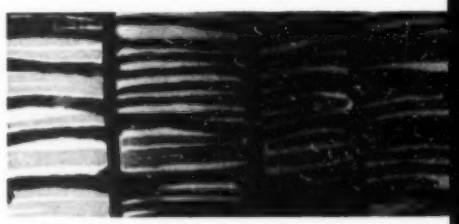


M. Cuvelier calls this print *Isola*. As with most of his designs, it is freely drawn in the modern Franch manner.

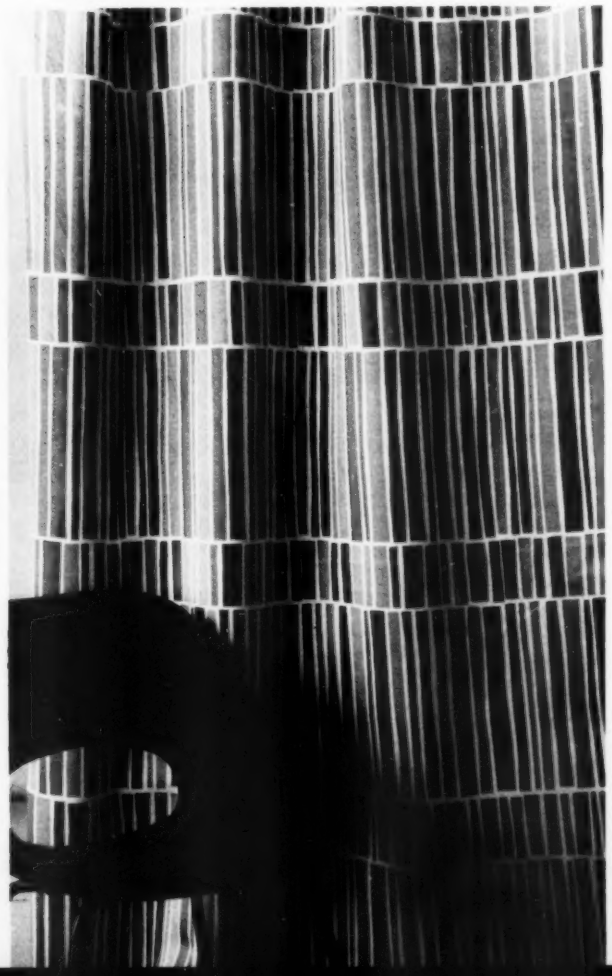
Designs like *Estoril* lend themselves to the wall-to-wall treatment on sheer fabrics over large expanses of glass.



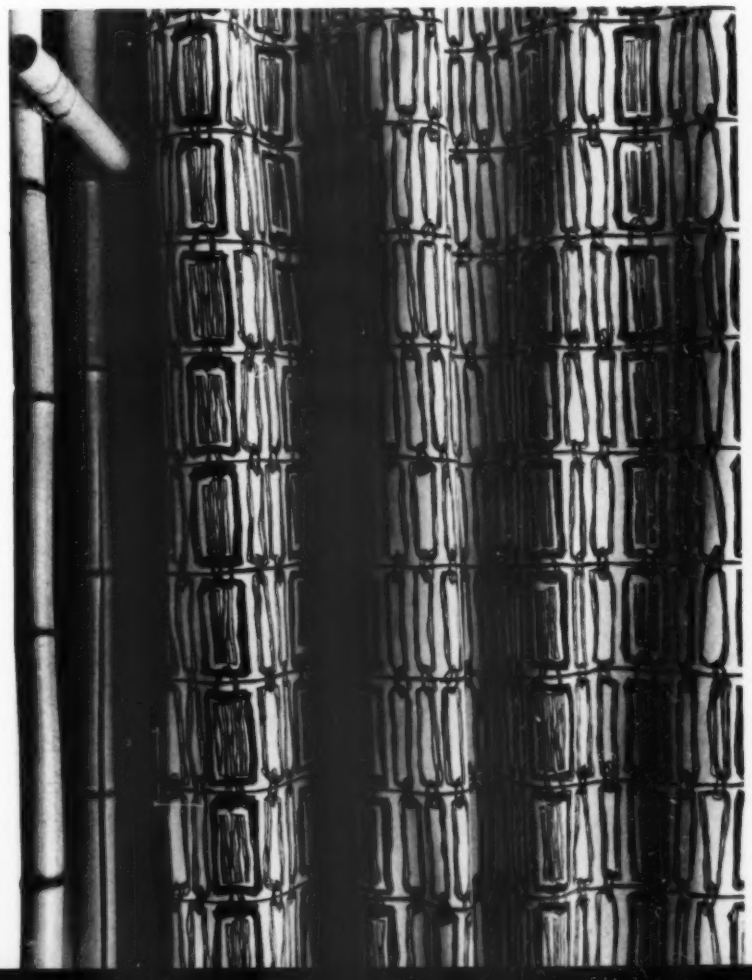


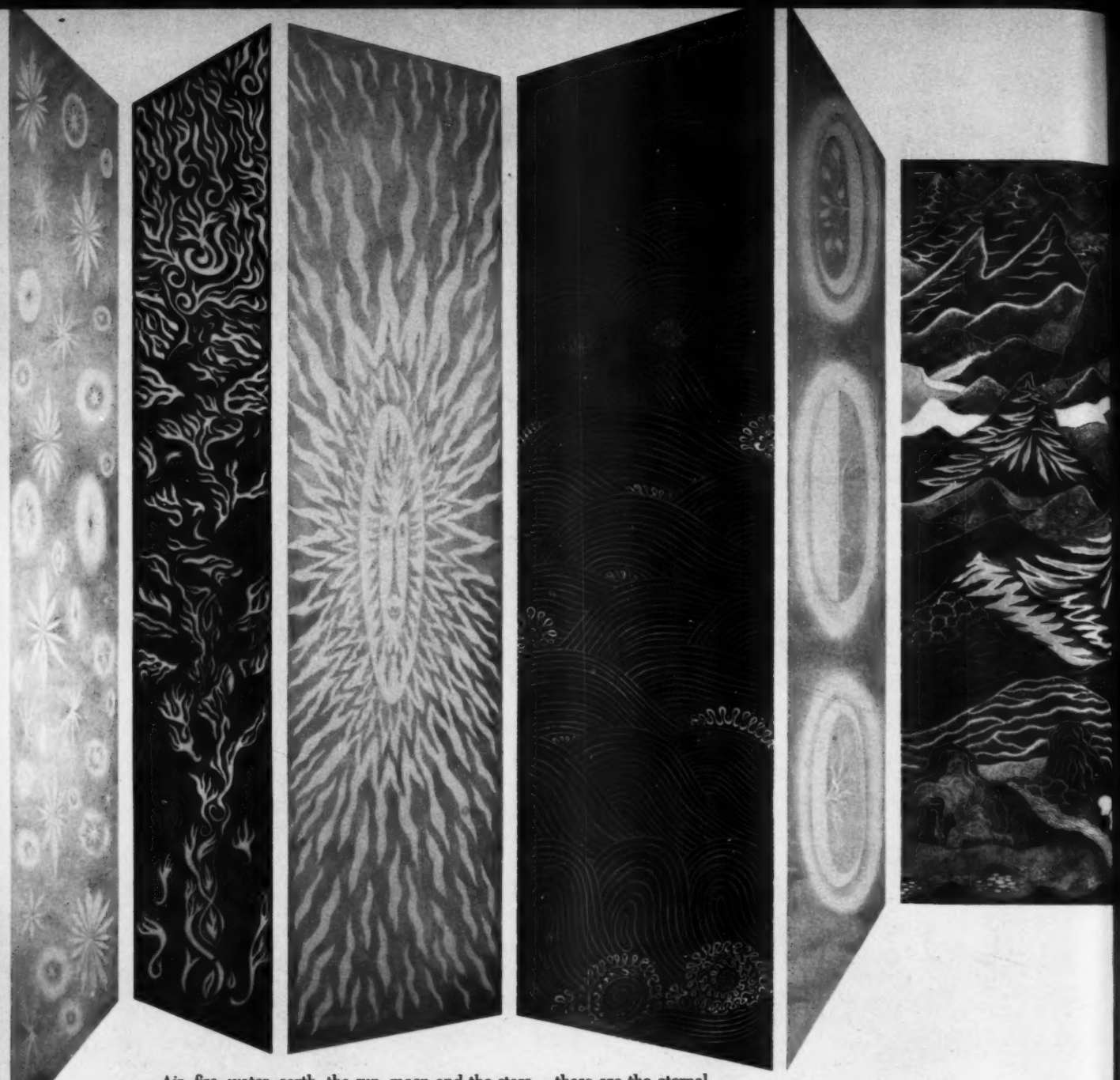


The Cuvelier showrooms on the Place Vendome in Paris are a mecca for interior decorators who favor prints like this.



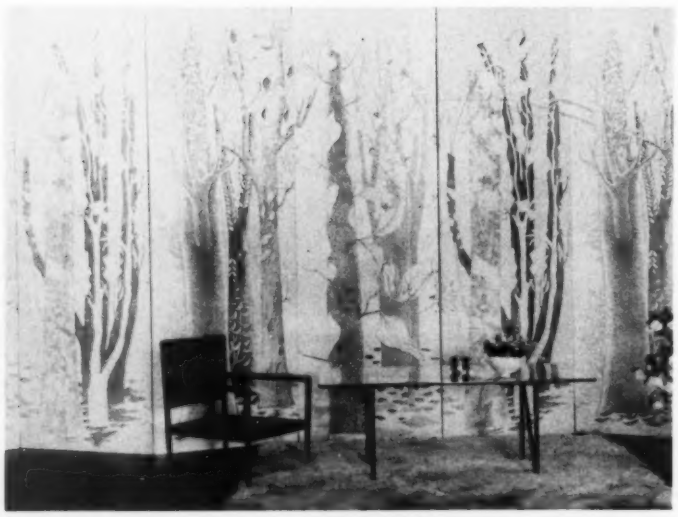
The monotone look takes on sophisticated overtones in such designs as those shown below and in the small panels above.





Air, fire, water, earth, the sun, moon and the stars — these are the eternal elements Miss Karasz has used as stylized symbols for her graphic murals.

FIVE NEW GRAPHIC MURALS BY ILONKA KARASZ

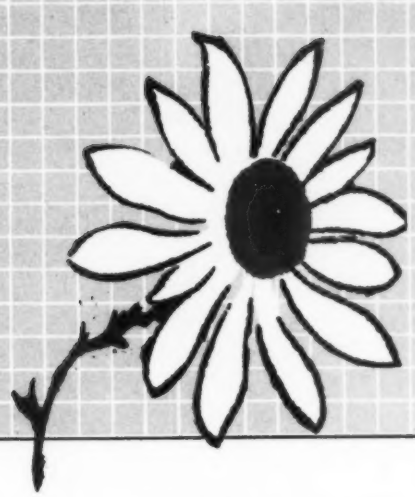


The sketch shows one of the many decorative uses to which the mural papers lend themselves.

THE NEW COLLECTION of mural papers shown on this page are the work of the famous artist and designer, Ilonka Karasz. They were conceived as panels to offer architects and interior designers an opportunity for what Miss Karasz calls "spatial play." As such they lend themselves to many varied end uses either as screens, dividers, door or wall decorations. The five designs can be used either singly or in combination and can therefore be extended indefinitely.

Miss Karasz is well known for her brilliant color work in textiles, wallpaper and ceramics but in this case she has chosen a monochrome palette so that the designs adapt themselves easily to many types of interior decor. The line and detail of the panels is executed in a fine combination of caligraphic pen and pencil.

The designs Miss Karasz has chosen are timeless — universal themes inspired by nature and the past. Her interpretations have transformed them into highly individual graphic expressions for contemporary decor.



A flower stays fresh and beautiful when man and nature join forces to give it nourishment and care.

The human body stays fresh and resilient when medical science teams up with its natural ability to maintain itself.

The mind stays fresh and alert when it is challenged to function at its highest creative level.

What makes a fiber and a fabric stay fresh and lively? How can it keep a permanent pleat or crease, yet resist wrinkles?

What makes it possible for a fiber or a fabric to retain its hand and neatness through the rigors of wear and climate?

AN AF MARKETING REPORT ON

KODEL®

The polyester fiber with the ability to remember and the muscle power to restore itself

Aerial view of the Tennessee Eastman plant group at Kingsport, Tennessee.

THE HISTORY OF KODEL

Kodel is a relative newcomer on the man-made fiber scene. It was launched in September, 1958. Actually it was ready much earlier, but Eastman wanted to get the most marketable fiber which could be achieved in the "easy care" area and also wanted to develop a strong merchandising program to back up its introduction.

In all, over eight years of research and development went into Kodel. Eastman's chemists and fiber experts analyzed all existing polyesters and invented additional polymer structures of their own. By a process of elimination and continuous exploration into the end use requirements, Kodel was engineered and the technologists were satisfied that it possessed the properties the company was seeking.

A Fundamental Difference

Here, it is important to point out that while Kodel is classified as a polyester fiber, it is fundamentally different from any other polyester both in chemical composition and internal molecular structure. It is this difference which gives Kodel the extra qualities that already have been enumerated. In conducting the research and development program for Kodel, Eastman drew on almost thirty years of technical and marketing experience in the textile field which began with the introduction of Estron acetate yarn in 1931.

Today, Eastman textile products include several forms of white acetate yarn, the widest range of acetate dyestuffs in the world, solution-dyed acetate (Chromspun), a special acetate tow for cigarette filters, a modacrylic fiber (Verel) and now Kodel.

Eastman's Commitment to Textiles

Out of this long experience, Eastman has emerged with a deep and long-term commitment to the textile industry. This commitment is based on a belief in the expanding future of the fiber field as it continues to fulfill the needs of a rapidly growing world population. This faith was well expressed at the introduction of Kodel in September, 1958 in the words of the President of Eastman Chemical Products:

He said: "Counsellors of doom are not hard to find who point to the sharp and recurrent downturns in the textile industry, and particularly to its apparent long-term declining trend. Eastman, as a fiber producer, is by no means insulated from these exigencies and risks; but the record so far would indicate that an active research and development program, modern production techniques and facilities, an alert marketing organization operating on sound merchandising principles, and resourcefulness in perceiving and exploiting opportunities, serve at least as an antidote."

All these factors – as the succeeding pages of this report will show – have been combined to produce the success story of Kodel – "the liveliest polyester fiber yet!"

What goes into the development of a new fiber?

Basic Polymer research at Eastman is the first step.

How Kodel Helps Modern Apparel Fabrics Stay FRESH and Wear Better Longer

EVER SINCE man first began to wear clothing, he has constantly sought ways and means of making it look and wear better longer. This entails the ability of a garment to remain fresh and neat in appearance throughout long active days, or in humid and wet weather, and also the ability to be restored to its original condition, whether by simply being hung on a hanger or by having to withstand laundering or cleaning.

Obviously, the performance of any garment is only as good as the materials and workmanship employed to produce it. Poor tailoring can ruin the finest fabric, just as the fibers used, the construction and finishing of any fabric determine the level of quality and performance that can be achieved.

In arriving at the ultimate goal of a garment that functions as well as it feels and looks, the inherent abilities of the fiber which begins this cycle certainly is of paramount importance.

The Ability to Remember

The ability of any fiber to stay fresh and resilient and to return to its original form when subjected to any kind of stress, depends on its ability to "remember," coupled with its "muscle power" to resist distortion and recover its own identity.

Designs in Kodel by Adelaar, Kate Greenaway and Alice Stuart.

It may seem strange and almost metaphysical to speak of an inanimate fiber as having an ability to "remember." Yet this is the literal truth. The ability to "remember" is well-known in textile technology and is exactly the same kind of ability that is the basis of modern electronic brains and computers. It is simply a shortcut for describing a series of complicated chemical reactions.

Every fiber – both natural and man-made – has a definite physical and chemical structure which gives it a distinctive form or personality. This structure and the resulting characteristics are imparted to any fabric woven from the fiber.

Now the physical and chemical structure of a fiber can be altered temporarily or permanently by applying tension, heat, moisture, chemicals, or by other means. Each type of stress has an effect on the normal position of the molecules of the fiber and changes it to some degree.

In ordinary usage, however, the stress to which fibers, fabrics and garments are subjected does not permanently alter the structure of the fiber and it tends to return to its original state of its own accord. The fiber "remembers" that original identity and finds its way back. Chemically, the fiber's personality – which has been momentarily disoriented through outside stresses – tends to restore itself to the particular qualities which belong to it.

The blending of the new "wash and wear" fibers with natural and other man-made fibers is the area where the most satisfactory results have been accomplished in terms of technical performance and aesthetic "hand."

It is precisely in this area of blending that Kodel has achieved impressive results and remarkable success in the short period of time since September, 1958 when it was launched.

The chief reasons for this success can be summed up as follows:

1. Kodel has a unique chemical molecular structure. It provides softness and flexibility, yet has a strong ability to remember as well as liveliness and recovery power. This enables it to achieve excellent performance characteristics and still have aesthetic "hand" when blended with equal or lower proportions of natural and man-made fibers in a wide variety of fabric weights and textures. Fifty per cent Kodel blended with fifty per cent cotton or fifty per cent wool results in fabrics with superior hand, plus stay-fresh and resilient qualities that meet the requirements of today's consumers.

2. Kodel has excellent resistance to pilling and helps control the pilling of any fabric blend in which it is used.

3. The low specific gravity of Kodel makes possible fabrics which have loft and bulk without weight and are therefore comfortable to wear. From the weaver's point of view, it provides excellent cover even in fine constructions.

4. Temperatures of up to 425 degrees F. do not affect the new Eastman polyester and those Kodel-blend fabrics which require ironing can be processed without fear of scorching or tenderization of the fibers. However, blend, construction and fiber content all play a part in controlling the degree of heat that can be applied to any fabric.

Palm Beach, McGregor, Manhattan, Joseph & Feiss use Kodel.

Why Fabrics Are Ironed

The attribute of "total recall" distinguishes the "wash and wear" fibers from other natural and man-made fibers. The ability to remember in other fibers is not strong enough, their

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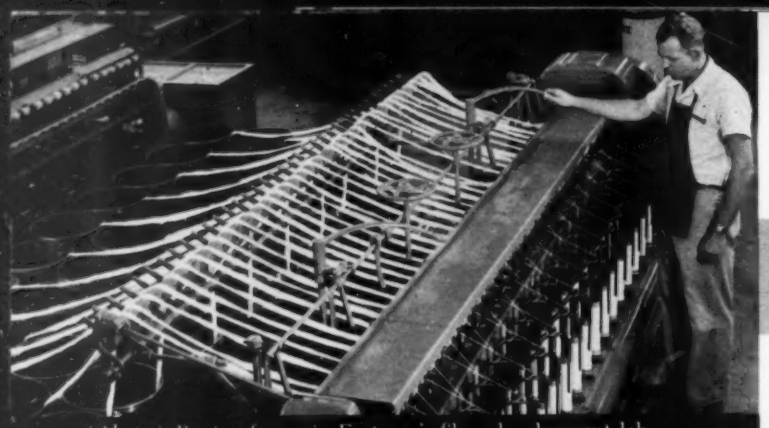
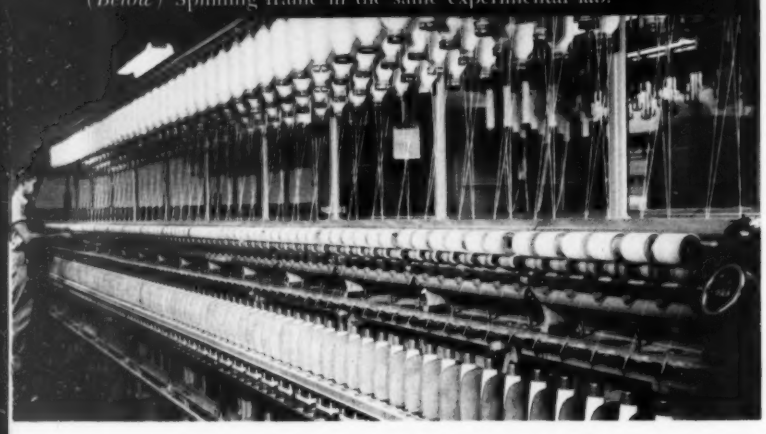


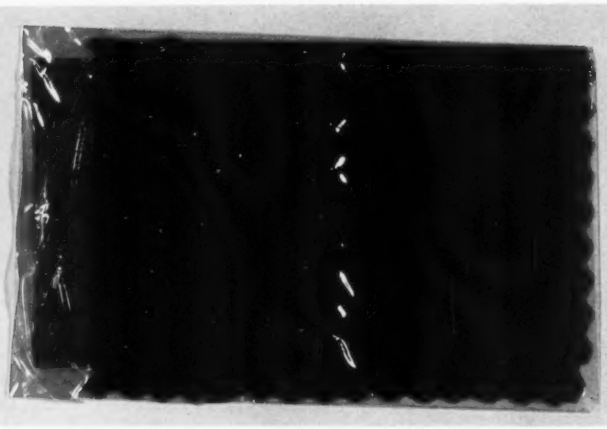
(*Above*) Roving frame in Eastman's fiber development lab.

(*Below*) Spinning frame in the same experimental lab.



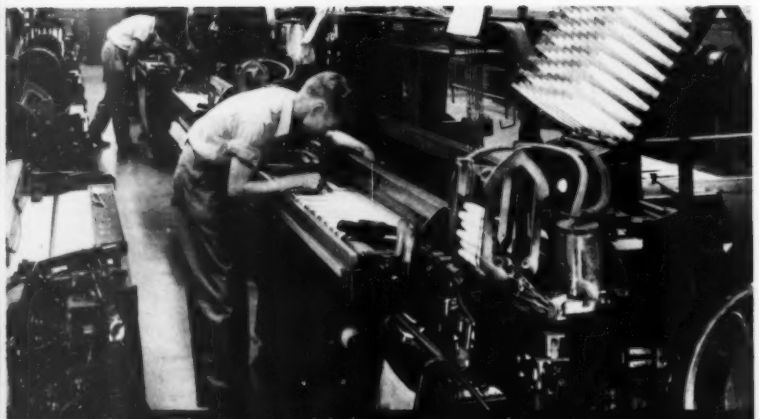
KODEL BLEND FABRICS

The classic tailored blouse by Symphony is made of a fine batiste-type fabric in a blend of 55/45 Kodel and rayon.



RESEARCH ACHIEVES FABRIC PERFORMANCE

From Eastman's extensive research facilities comes the tested fabric performance demonstrated by the swatch in the envelope. You can make your own test with this pre-creased J. P. Stevens fabric of 70% Kodel and 30% wool. The crease will stay in place even though you wet the cloth. A suit or slacks of this fabric, worn in the rain, will dry out with creases intact.

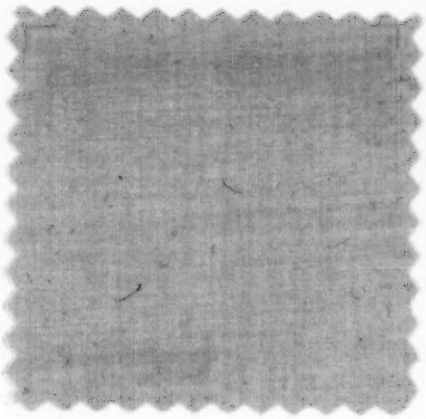


(*Above*) The Eastman lab has experimental weaving section.

(*Below*) Commercial jig dyeing machine tests new dyes.

A black ecclesiastical cloth, solution-dyed from 50/50 Kodel and rayon. By Hi-Lankenau. Mill is J. P. Stevens.

TELL THEIR OWN VERSATILE STORY



A basic batiste in the popular linen shade. 50/50 Kodel and cotton from Travis. Mill is Wellington Sears.

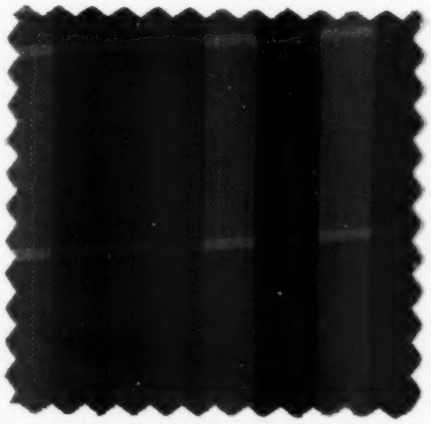
Men's sportswear by McGregor features a variety of stay-fresh blends of Kodel with cotton and with Topel rayon.

Bachmann Uxbridge produced this coating fabric from a 50/50 blend of Kodel and wool. It has a fine natural hand.

Amerotron's classic flannel cloth for suits and slacks is a 65/35 blend of wool and Kodel in black-brown color.

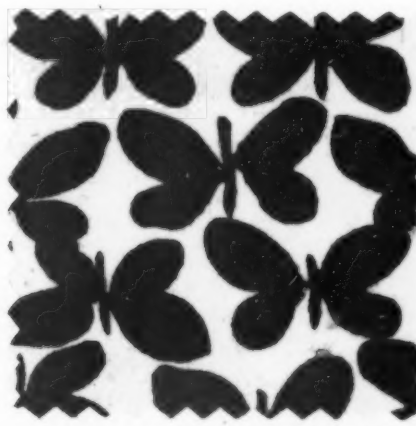
A subtly striped suit and slack fabric of 55% Kodel with 45% wool. It is produced by Burlington's Pacific Mills.

A lightweight men's wear suiting and slack fabric of 55/45 Kodel and rayon by Goodall-Sanford (Burlington).



A 50/50 Kodel and cotton blend styled by Crown Textile Fabrics. Mill source is Deering Milliken Company.

A basic men's oxford weave shirting by Greenwood Mills is produced in an intimate blend of 50/50 Kodel and cotton.



Travis converted this printed dress fabric from a blend of 55% Kodel and 45% Topel rayon. Mill is J. P. Stevens.

In little more than a year the Kodel/cotton blend has built a strong position in the men's shirt field

CASE HISTORY OF THE DELCOT SHIRT

ONE OF KODEL's most impressive success stories is that of the men's Delcot shirt by Manhattan. Manhattan has one of the best-organized and most dynamic shirt operations in the field and its progressive management is always alert to new scientific advancements.

Early Experimental Work

Eastman approached Manhattan in 1956 to work with them on the development of Kodel/cotton blends in batiste and broadcloth constructions. These were then tested in actual garments by Manhattan. The 50/50 blend of Kodel and cotton was conceived, and in early 1958 was made up into experimental shirts, after Eastman had tested it extensively in the laboratory. The new blend in both batiste and broadcloth constructions offered an added comfort feature to the "wash and wear" shirts already available and was able to do this at no sacrifice in performance or utility.

Mill Enters Picture

Later in 1958, after further qualification tests by the manufacturer, an outstanding mill source in the shirting goods field was approached jointly by Eastman and Manhattan – Wellington Sears Company. In actual mill production, as in the previous tests, the new 50/50 blend met with enthusiasm and was developed to an optimum practical construction of 96 ends by 84 picks with 50 singles warp and filling – an effective shirting.

Harvey R. Sugel, Vice President in charge of Merchandising at Manhattan, expressed his approval of the fabric in these words: "This batiste met all our production and fabric quality standards for strength. It has a supple yet firm and appealing hand, excellent absorptive qualities which contribute to wearing comfort, is notable for the absence of pilling and its ability to restore itself after washing."

From a mill standpoint, the greater resiliency and covering power of Kodel polyester fiber permitted the desirable 50/50 blend level which enhanced the aesthetic appeal of the fabric's hand. "Another important factor," according to W. Oakman Hay, Vice President of Wellington Sears, "was that Kodel could be spun and woven on existing mill equipment and processed with good efficiency and a low percentage of seconds, in keeping with the standards of our company."

Consumer Response Excellent

In the Spring of 1959, the Manhattan Delcot shirt was introduced to retailers and consumers nationally – a quality "wash and wear" shirt at $5.95. Store acceptance was immediate, because of the previous success Eastman and Manhattan had achieved in the man-made fiber field. A year later, the merchandising picture shows better acceptance than ever by the consumer. Shirt sales have been on a constant upward trend, and have been complemented by the addition of Delcot sport shirts, pajamas, and underwear. As Robert Leeds, Vice President in charge of Marketing, says: "From a marketing viewpoint, the success of the Manhattan Delcot shirt was primarily due to the important niche it filled in our overall merchandising picture – specifically in the area of wash and wear fabrics. It created additional business and an opportunity for Manhattan and its retail customers to trade up and profitably sell better merchandise."

Perhaps the most significant aspect of the success story of the Manhattan Delcot shirt is at the retail level – for example, at John David, New York. "From a retailer's point of view," says Warren La Due, Vice President of John David, "the Delcot shirt fits into a selling picture which extended the scope of the overall Kodel sales approach in our stores. It offered a head-to-toe, complete Kodel wardrobe selling package; and, at the same time, it created a market for itself because of the excellence of the product. Kodel is definitely a success at the retail level, and the Delcot shirt now accounts for 50 per cent of all dress shirt sales, including all fibers, at John David."

How Kodel Helps Modern Apparel Fabrics

(continued from page III)

muscle power is not great enough to enable them to find their way back of their own accord. They need help through ironing or heat or chemical finishing to help them regain their original state.

This quality of memory also applies to the hand or tactile qualities of fabrics made from polyester fibers.

A Fabric's "Hand"

The natural fibers impart unique "hand" or tactile qualities to fabrics made from them and for this they have become renowned and sought after since the human race first began using and judging textiles.

We speak of . . .

- the clean, dry, friendly hand of cotton.
- the smooth, luxurious, sensual hand of silk.
- the cool, honest hand of linen.
- the supple, resilient, crisp and lively hand of wool.

While these judgments of "hand" are not matters of science but of emotion, it is possible to satisfy the emotional responses to tactile qualities and still achieve the utmost comfort and practicality in fabrics and garments through technology. Today's fibers can be engineered to produce any effect desired in the appearance or performance of fabrics or garments. And whether used alone or in combination with other fibers, the new "wash and wear" fibers offer "built-in" beauty as well as end use characteristics that are self-sustaining.

McGregor golf jacket

College Town & Worsted-Tex blazers

Slacks by Hochenberg & Gelb

Weldon pajamas

A WIDE RANGE of KODEL BLEND FASHIONS with STAY-FRESH PERFORMANCE

Jantzen swimwear

Robert Morton dress

Mr. Gee sportswear

Alligator raincoat

Varsity Town suit

Hochenberg & Gelb slacks

Michaels-Stern suit

Gardner coat

Tiny Town Togs dress

Palm Beach suits

Esquire slacks

(continued)

MANAGEMENT BLUEPRINT

FOR THE RESEARCH, DEVELOPMENT AND MARKETING OF A NEW FIBER

RESEARCH
FIBERS DEVELOPMENT
SALES DEVELOPMENT
(Mill Evaluation)
MARKET EVALUATION

ENGINEERING AND CONSTRUCTION
PILOT PRODUCTION (Product Evaluation)
MARKETING
FULL PLANT PRODUCTION

SALES DEVELOPMENT
MERCHANDISING
- Fabric Development
- End Use Development
- Sales Services

- Product Publicity
- Advertising
- Retail Promotion
- Sales Training
- Consumer Education

The chart below and the explanatory paragraphs present a rare picture of what it takes to put a new fiber in the field and what impressive facilities Eastman brought to the task

Research Division

(Tennessee Eastman Company)

This division engages in "pure" research in many different directions. Its initial interest in the polymers was due to the importance of their chemistry in film, plastics and fibers.

The Research Division utilized its experimental work to develop a new type of polyester fiber having certain characteristics. When this experimental research produced a fiber that appeared to have worthwhile qualities, it was turned over to the Fibers Development Division.

Fibers Development Division

(Tennessee Eastman Company)

The function of this division is to evaluate experimental fibers against all other fibers on the market. This work is done both in the laboratory and on actual production equipment at Tennessee Eastman Company, where it is used to produce a variety of fabrics for the fiber's indicated end uses.

This in-plant evaluation provides a basis for suggested changes and modifications in the original experimental fiber, which are undertaken by the Research Division.

When Research and Fibers Development is satisfied with a fiber, it is then submitted to Eastman Chemical Products, Inc., the sales and merchandising subsidiary of Eastman Kodak Company and corporate affiliate of Tennessee Eastman Company.

Sales Development Department — Mill Evaluation

(Eastman Chemical Products, Inc.)

The first step by Sales Development is mill evaluation of the fiber. This is accomplished through processing by an independent mill as part of its standard production. This independent mill evaluation gives Eastman an opportunity to determine if further changes are needed in the fiber.

Technical, as well as marketing personnel, work closely with the mills and exhaustively check how the fiber performs at every stage of mill production.

Indicated changes are referred back to Fibers Development and/or Research.

Sales Development — Market Evaluation

(Eastman Chemical Products, Inc.)

Here the new fiber is evaluated in terms of its present and potential markets and a comprehensive report is prepared for management study.

If the market evaluation is deemed favorable, several things are done simultaneously.

Engineering & Construction Division

(Tennessee Eastman Company)

This group is now assigned to plan and estimate the machinery and equipment, plus the size, type and design of the building required for a pilot plant. Such a plant involves the use of actual production procedures as well as full scale machinery and equipment, and is designed to produce enough fiber for limited end use evaluation in selected consumer merchandise.

A complete report is prepared for management.

Sales Development — Product Evaluation

(Eastman Chemical Products, Inc.)

This department now selects initial end uses and customers with whom Eastman will work on a limited "pilot" production basis.

This information and recommendations are submitted to management.

Eastman Chemical Products, Inc. must then decide if the program and fiber warrant recommendations to Tennessee Eastman Company to proceed with full scale production of the fiber.

Sales Development Department — Full Scale Production

(Eastman Chemical Products, Inc.)

Continued investigations into new applications and new markets by teams of both technical and marketing research analysts are now conducted.

Marketing (Sales and Sales Service)

(Eastman Chemical Products, Inc.)

Regional sales offices in major textile areas, plus the export sales department, keep in constant touch with mills at both their production and marketing levels.

Marketing (Merchandising)

(Eastman Chemical Products, Inc.)

1. Fabric development.

2. Merchandising of end uses – apparel and piece goods; home furnishings; and industrial. This includes market coverage at mill, converter and manufacturer levels.

3. Merchandising services:
   - Laboratory testing and registration of fabrics.
   - Tags and labels.
   - National and local product publicity.
   - National and local advertising at trade and consumer levels.
   - Retail promotion, including displays and demonstrations.
   - Education through direct demonstration and mailings to schools and extension services.
   - Studio facilities for production of photographs for adveristing, product publicity and display.
   - Art Department for production of mailers and other promotion pieces, films for sales training, etc.

GREEK DESIGN

FOR THE

MODERN WORLD

ATHENIAN VASE FROM THE 6TH CENTURY B.C.

Through ancient painted Greek vases
like the beautiful example shown here
we have learned most of what we know
about Greek art and the Greek way of life.

PLEASE TURN

GREEK ART IS AN INSPIRING SOURCEBOOK FOR WE MODERNS

IN THE LAST ISSUE of American Fabrics (No. 49) we discussed the growing revival of Greek design influence and its importance as a source of new inspiration for modern fashion and textile designers. We pointed to the cultural need for a revival of the Greek Spirit and the new interest in Greece as a source of travel adventure. Our illustrations were drawn from the costume arts of 18th and 19th Century Greece and their origins in the ancient past.

We now turn to that ancient past as it is revealed to us in the magnificent examples of Greek and Minoan vase painting, statuary and wall frescoes which come down to us through more than 4500 years of world history.

The purity of form, the abstract geometric motif, the infinite variety of line and detail, the exciting use of color harmonies, the overall sophistication of the decorative approach – all these have much to say to the modern designer. On the whole, except for isolated pockets of "good" design, we live today in an over-decorated culture and only within the last decade

CORINTHIAN BOWL

or two have we begun to learn and practice the virtues of refinement and simplicity. The Greeks, too, loved decoration but they practiced it with control and it emerged from an inner harmony and with a wholeness which made it an integral part of their culture.

Greek architecture and statuary, as we see it today in our museums, do not give us a true picture of ancient Greece because time and weather have destroyed the bright colors with which the ancient Greeks decorated most of their buildings and their statues. We therefore often tend to idealize the "purity" of Greek art since we see it without color. But in the vase paintings such as those shown here the color has been preserved as it was laid on by the ancient artists and it is here that we find a truer picture of what has been called the world's first "modern" civilization.

The large figures shown here are details from an Athenian vase (*amphora*) painting of the 6th Century B.C. (*Museo Etrusco, Rome.*) They were painted and signed by *Exekias,* who is considered by some to be the greatest of the Greek potter-painters. The figures are those of Leda (*left*) and Tyndareus (*right*), the mortal parents of the twins Castor and Pollux. Here, as in most Greek vase paintings, the design and detail of the garments suggests interesting possibilities for the modern textile and fashion designer.

ATHENIAN VASE

GREEK ART *(continued)*

SEEN FROM ABOVE the Athenian vase (large photo) and the shallow Corinthian bowl (below) reveal the Greek flair for abstract decoration. It is this genius for abstracting realistic forms and fitting them into an overall decorative scheme which makes Greek art so rich a source of inspiration for the modern designer. The dolphin design shown here is as "modern" and sophisticated as our best contemporary decorative work.

The sophistication of an ancient Minoan dress is seen in the costume of the Cretan snake goddess.

THE FASHIONS OF ANCIENT CRETE

Over four thousand years ago, Minoan culture produced fashions which offer modern designers a new source of inspiration

THE CLASSIC COSTUME of ancient Greece, with its graceful folds and understated decoration is well known to the world. Less well known is the costume of ancient Crete which has much to offer the modern fashion and textile designer.

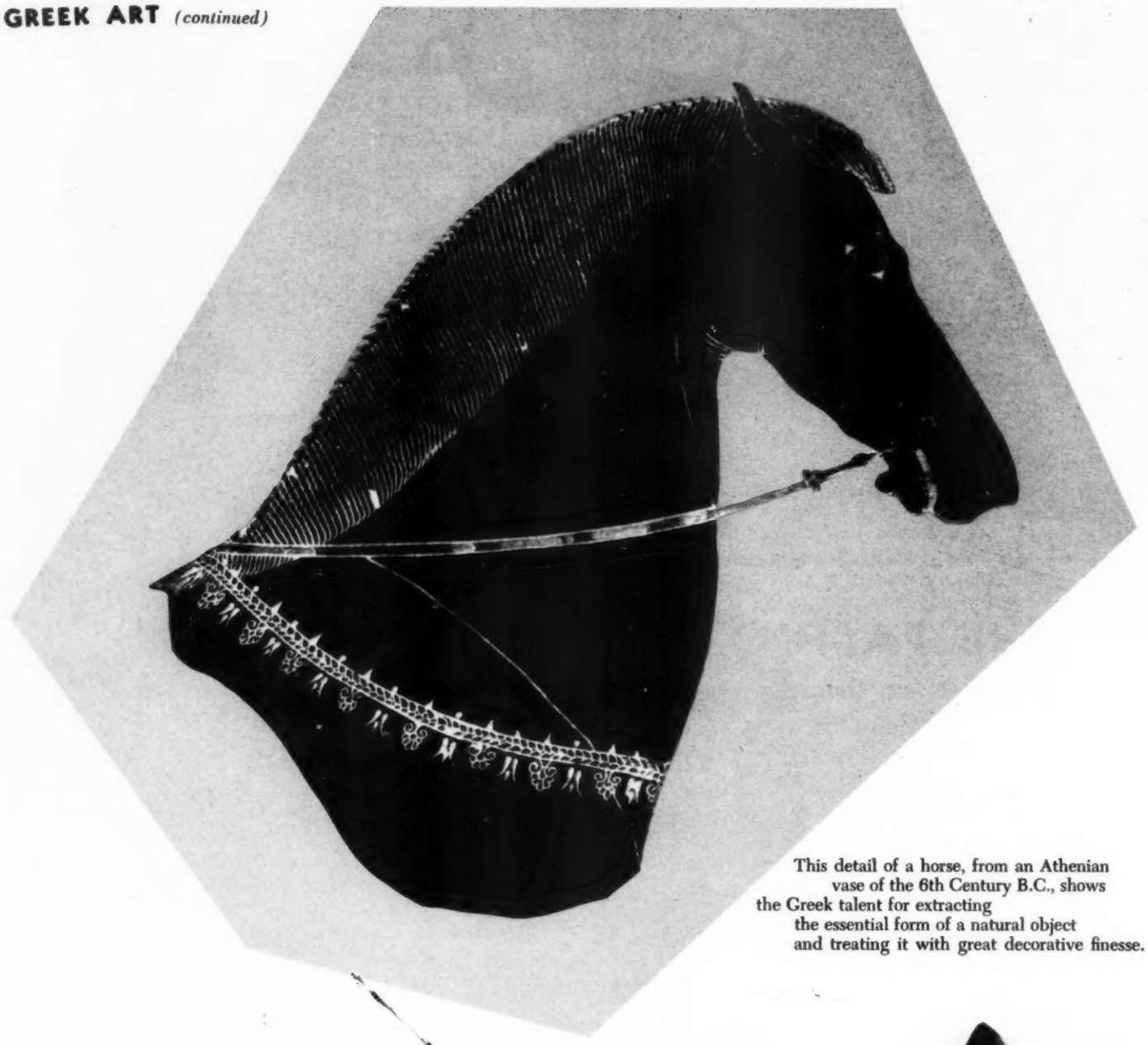
The island of Crete lies in the Aegean Sea between Europe, Asia and Africa. It is the largest of the Greek islands – 180 miles long and 35 miles wide at its broadest point. On its soil flourished one of the earliest civilizations of the world. In Homer's Odyssey we read of "a land called Crete in the midst of a dark wine sea, a fair rich land begirt with water; and there are many men past counting and ninety cities." But by the 9th Century B.C. the advanced civilization of Crete was already extinct and had become a myth in the lore of mankind.

On Crete stood the fabled Palace of Knossos, home of its legendary kings (*Minos*). Archeological excavations on this five-acre site have revealed a sumptuous and sophisticated standard of living which included such comforts as running water and sanitary facilities. It is from the reconstruction of Knossos that we derive our knowledge of Minoan culture – so-called from the name of its kings. From its beautiful frescoes, its seals, plaques, statuary and decorated pottery comes the revelation of an approach to fashion which seems unbelievably sophisticated when we remember that it dates from 2600 B.C.

In ancient Crete it was the fashion for women to expose their breasts or cover them with a diaphanous and transparent fabric. By contrast the rest of the body was heavily gowned and bejewelled. The low cut bodice and the full skirt, the slit overskirt, the separate jacket and skirt, the wide and intricately worked belt, the formal jewelled headdress – all these had their origins in ancient Crete and still survive in the

(continued on page 75)

The drawing on the opposite page and the photograph on the right show variations in the traditional costume of ancient Crete. The photograph shows the diaphanous chemise which sometimes covered but did not conceal the breasts. The drawings shown here were made for American Fabrics by the Greek designer, George Kraniotakis and were based on Minoan frescoes. Photographs of Minoan artifacts are from the Boston Museum of Fine Arts and the Candia Museum in Greece.



This detail of a horse, from an Athenian vase of the 6th Century B.C., shows the Greek talent for extracting the essential form of a natural object and treating it with great decorative finesse.

The decorative motifs on Greek vases like the ones shown here offer textile designers an unending source of ideas. The abstract and geometric forms lend themselves ideally to the design of modern fabrics for both apparel and home.

(continued from page 73)

traditional peasant costume of the island.

Archeological exploration has been able to separate Minoan fashion into three main periods and the details of each period are worth noting:

Early Minoan Costume

The earliest period of Minoan fashion begins about 2600 B.C. The prevailing dress was a long cloak cut out after the manner of a cope. A girdle was passed around the waist and knotted in front. Holes were cut out for the arms and the whole garment may have been made of leather since the silhouette seems to be bouffant without benefit of hoop or crinoline.

This simple garment later developed into a fitted bodice and an attached skirt which was either gathered at the waist or cut with gores. The skirt was usually decorated with what appears to be a striped applique and a "Medici Collar" effect at the back of the neck was achieved by a "cope-like" cutting out of the fabric.

The Middle Period

As Minoan civilization developed and prospered its costume changed and became more elaborate. The skirt became tighter, fitting closely about the knees with a slight flare at the bottom. The belt became more important since it covered the joining of the bodice and the skirt. Often the belt was padded and frequently it was made of metal curved to the figure. An overskirt or apron was worn both back and front and the costumes were lavishly decorated with ornaments and appliqued metal plaques.

The prevailing colors were rust red and buff, blue and yellow. Other variations in the dress of this period included tight girdles, flounced and pleated skirts, stiff corsets worn over the skirts and bodices laced below the bare breasts.

Later Minoan Fashion

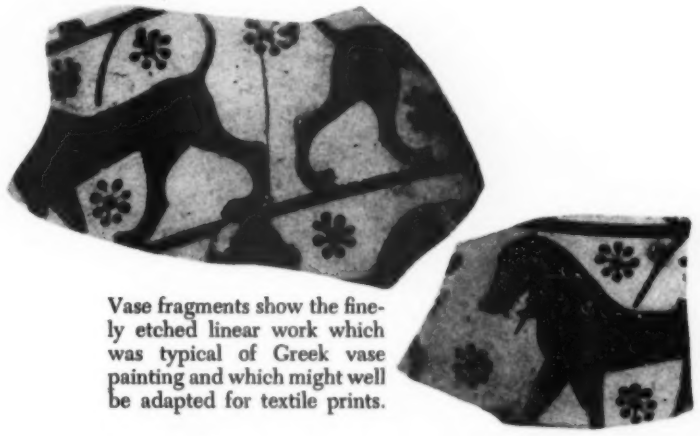
During the last period of Minoan civilization the silhouette remained about the same except that the flounces of the skirt dipped in front and back and were spaced in rows to reveal the underskirt. It gives the impression of wide flounced trousers. Some of the frescoes also suggest a diaphanous chemise covering but not concealing the breasts.

Decorative motifs showed a fondness for the spiral, the sacred saffron flower, flying swallows and butterflies. Black and white stripes were also popular and a great deal of jewelry was worn on the arms, the neck and in the hair. There were hairpins of copper and gold, brooch pins with gold animals and flowers, beads of crystal and quartz, gold hair bands and diadems, ear rings and pendants of precious metal, decorative plaques worn over the bare breasts, bands and bracelets for the arms, finger rings of silver, steatite, agate, amethyst and gold and necklaces of Minoan blue glass.

Hats were worn and these were either conical in shape or designed like a flat turban to which dangling streamers were attached. Gloves too were worn and this is the first time we have any record of gloves in the history of costume. Shoes, too, were very decorative, generally of white leather, embroidered and beaded.

The costume of Crete was perhaps the most elaborate and sophisticated of its time. In many ways it suggests a much more modern and urban civilization and it had very little in common with the costume of any other culture in this early period of the world's history. — Sofia Tournakis

The double-headed gold votive axe, dating from 1500 B.C., was a symbol for the legendary kings who lived at Knossos.



Vase fragments show the finely etched linear work which was typical of Greek vase painting and which might well be adapted for textile prints.

A Cypriote vase from the 8-7th Century B.C. Such simple geometric decorations are very modern in their effect.

PAINTING BY TSING; COURTESY OF GUIMET MUSEUM, PARIS

the Horse *and the* Old Man

Once upon a time there was a Chinese Emperor who loved horses. His stables housed the most splendid animals to be found throughout the great land of China. Emissaries from his court continually traveled to far-away countries in search of new additions to the Emperor's stables.

Then one day the Chief Minister appeared before the great Emperor.

"Your greatness" he said "I bring good news. In the far-off province of Tsing-sai there is an old man who is a great and infallible judge of horses. His name is Kao, and while he is a hawker of fuel and vegetables he is also peerless in his judgment of horses. Nothing escapes his keen eye. He knows horseflesh as Kiang knows poetry. He can be counted on to find the finest horse on earth. He will search all lands indefatigably. Although he is old he will not cease his labors until he has found what he seeks. Your majesty can be certain of the result."

The Emperor was pleased and ordered the old hawker of fuel and vegetables to begin the quest at once.

. . . . .

One month passed . . . two, three, four months passed. There was no word from the old man. The Emperor sighed deeply but observing his Chief Minister's serene countenance, he remained patient.

Seven months passed. Then one day word came that the old man had returned, and that the search was ended. Without betraying his inner excitement the Emperor summoned his Chief Minister and the hawker of fuel and vegetables to the innermost court. "Tell me, old man, about the great horse – is it black, is it white, is it chestnut, is it grey? Is it a stallion or is it a mare? How many hands high does it stand? Tell me Chiu Fang Kao, about the great horse you have found. I cannot wait to see it."

"Sire," said the old man "I do not know. I do not recollect whether the horse is dun-colored or a dapple-grey mare. I have left it a day's journey away. It will be brought here on the morrow. But I think it is a dun-colored mare. Sire, I am sorry I cannot say." And with these words, the old man took his leave of the Emperor and the Chief Minister.

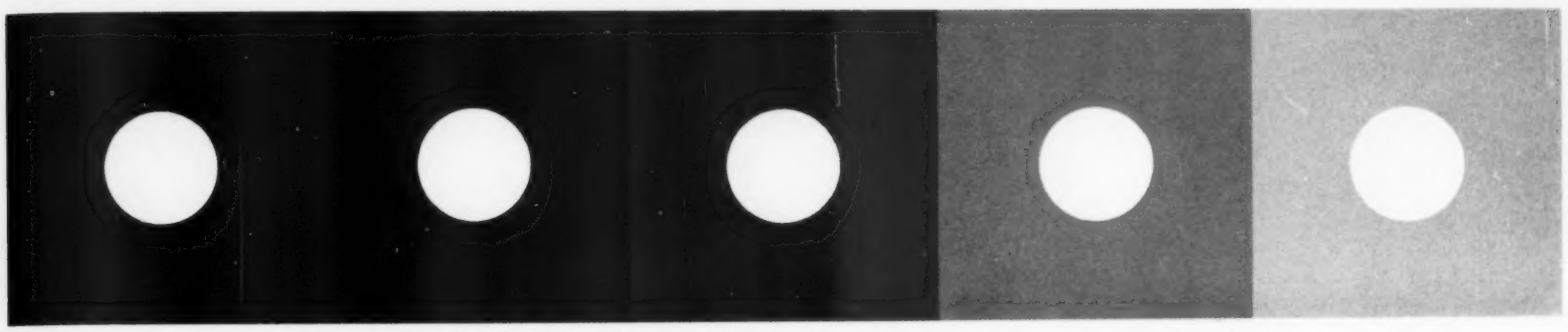
The next day, the Horse arrived at the Emperor's Palace. It was a coal-black stallion—unmatched for beauty, for strength, for fleetness. The great Chinese court had never seen such a horse. The Emperor was ecstatic. He summoned the Chief Minister.

"The horse is indeed the finest steed I have seen" he said. "The old man is surely the greatest judge of horseflesh in the world. But why, when we questioned him, was he so uncertain? It seemed he could not even distinguish the beast's color or sex. He could tell us nothing. And I thought . . . what on earth could he know about horses? But indeed he has found the horse I have sought all my life! How can this be explained?"

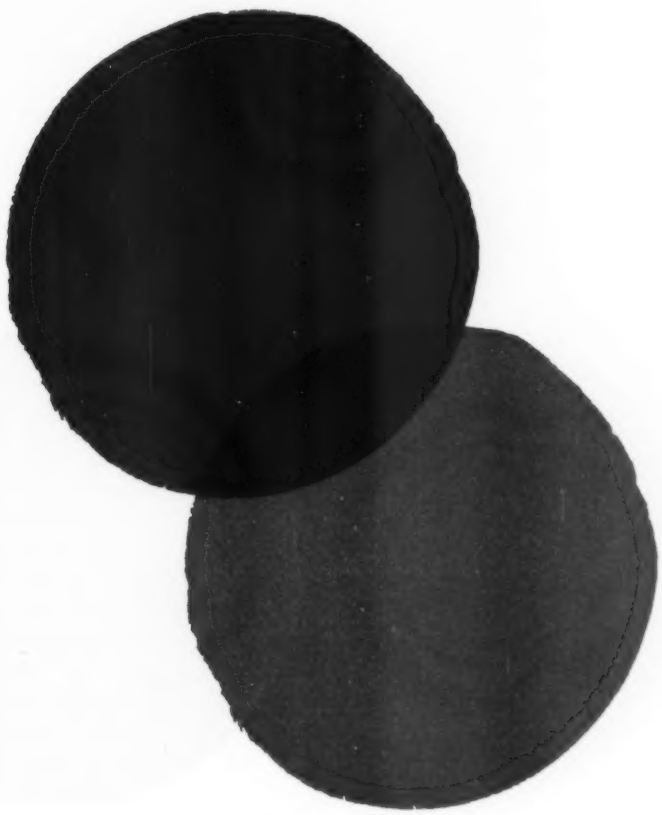
"Your Majesty," replied the Minister "Chiu Fang Kao is indeed unique in his profession. His judgment of horses is without equal. What he keeps in view is only the essential – the horse-ness of the horse. In looking for the essential, he forgets the inconsequential details; intent on the inward qualities, he loses sight of the external. He sees what is important to see and does not see what is extraneous. He looks for the things he ought to look for and neglects those that need not be looked for. He is worth a thousand men without vision. He has taught me to judge things other than horses."

. . . . .

The horse was indeed a superlative horse.

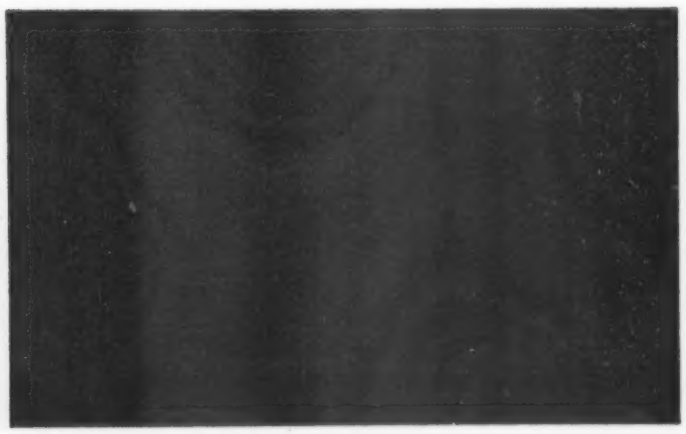


Adjacent colors can either intensify or mute a particular shade. Center colors are same throughout.



COLOR

The logic of color is a
matter of science but the magic
of color is rooted in the
emotions and it is this quality
which makes it the primary
ingredient in the world of fashion



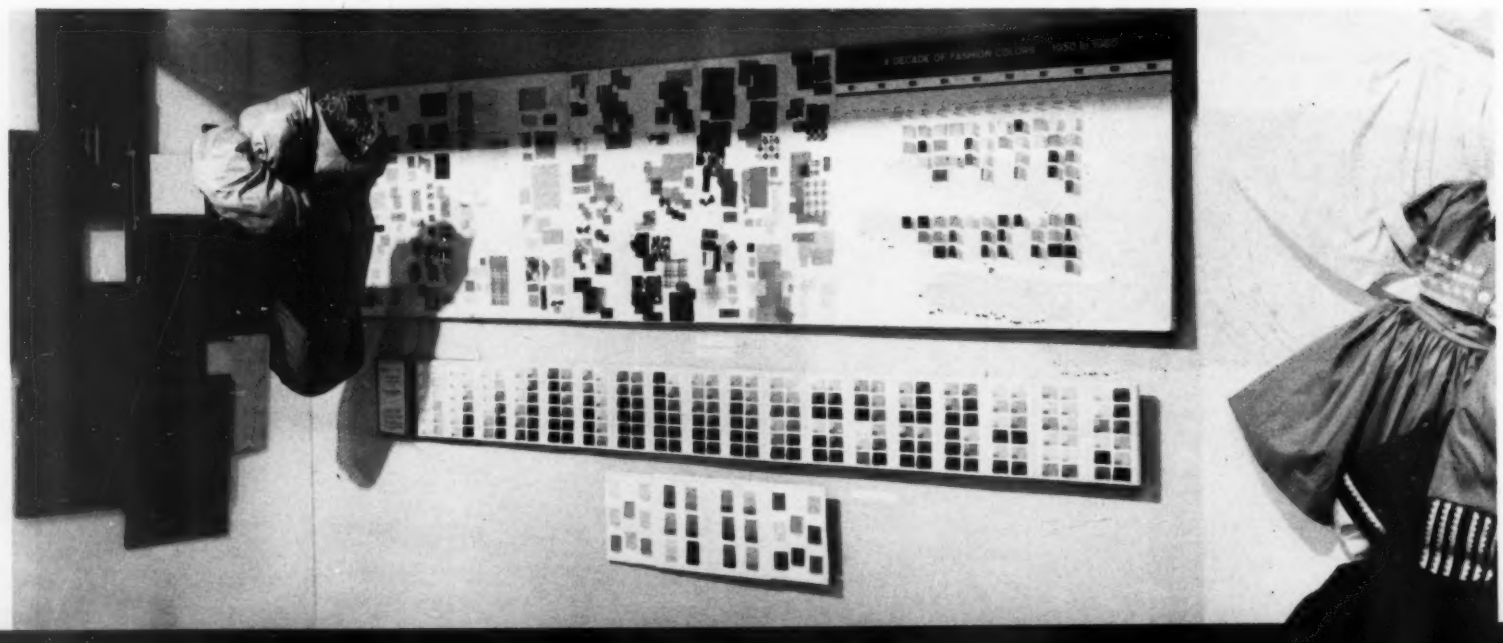
A section of the Cooper Union exhibit is devoted to the Ostwald and Munsell color systems. The hanging, showing the use of textile colors, is a 17th Century Gobelins.

Cooper Union, which houses the current color exhibit, has a fine working collection of historic textiles and wallpapers.

The science of color is ably demonstrated in wall displays like the one above.

The colors of Chinese textiles and artifacts occupy a section of the exhibit.

Fashion and color occupies an important section in the Cooper Union color exhibition. Trends in color are displayed below. At the upper right is a color chart prepared by American Fabrics Magazine showing the significant shifts in fashion colors in the decade from 1950 to 1960.



The Logic and Magic of
COLOR

A concise and lucid examination of color — its science, its historical development, its recurring fashion cycles, its importance to art and commerce

By Edward Kallop

Of all visual phenomena, color is so common a part of our lives that few of us ever really see it and fewer still speculate on such simple yet enigmatic questions as how and when colors were named as they are, whence come the dyes that color our clothes and the pigments we spread across a canvas, how designers gauge the mercurial world of color fashion, to what degree colors better or worsen our psychological and even physical lives, or simplest and most puzzling of all: what, exactly, is color.

Color and Light

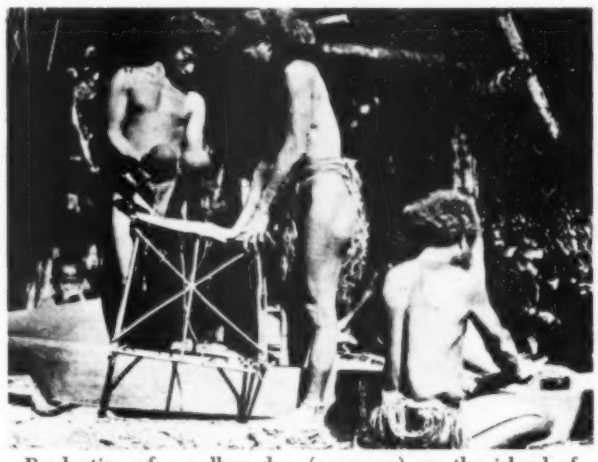
Color springs, literally, from the ether, for in the view of physical science it is correct to assign color not to an object but rather to the light reflected from the object. The sweater we wear is only red or blue or gray when we deal with it in practical, household terms; as an example of scientific explanation, its color is a sensation received as an image on the retina of the eye. In this scientific perception of color, the color-producing sensation is always caused by light which is but one of several aspects of radiant energy.

Invisible to the human eye are those forms of radiant energy known as radio waves, infra-red and ultra-violet radiation, X-ray and gamma rays, while light that can be seen is contained within the visible spectrum, composed of a distinct series of colors ranging from violet at one end to red on the other. We see the spectrum in exactly this range created naturally when there is a rainbow or, more commonly, a layer of oil slick on a wet pavement. Our knowledge of the spectrum as a scientific phenomenon stems chiefly from the late 17th century when Sir Isaac Newton recreated the colors of the spectrum by directing light through a prism. Newton was aware that not all colors were of precisely the same nature; the difference in their appearances to the eye had to be accounted for in terms of physical science and Newton concluded that "it is manifest that if the Sun's Light consisted of but one sort of Rays there would be but one Colour in the whole World, nor would it be possible to produce any new Colour by Reflexions and Refractions, and by consequence that the variety of Colours depends upon the composition of Light."

In 1669, Sir Isaac Newton (*left*) developed the scientific phenomenon of the color spectrum by directing a ray of sunlight through a glass prism. It was not until late in the 19th Century that the chemist Adolf von Baeyer (*right*), following in the footsteps of Perkin, was able to achieve the synthesis of indigo dye.

We know today, substantiating Newton's conclusion, that every color has a particular "Ray" all its own, what in modern terminology is called a wave-length. The wave-lengths of light visible to the eye are measured in millimicrons (one millimicron, abbreviated m*u*, is twenty-five millionths of an inch) with the range from violet to red confined to wave-lengths between 380 and 760 millimicrons. When all wave-lengths within these measurements are presented to the eye in approximately equal quantities we have a sensation of colorless, or "white" light.

The phenomenon of the rainbow, caused by sunlight dispersed on the curved surfaces of raindrops, and the beam of white light passed through a prism are examples of the separation of white light into its component wave-lengths. On the other hand, white light may be created by overlapping red, green and blue light, a demonstration illustrating additive color mixture since it is the addition of each of



Production of a yellow dye (curcuma) on the island of Yap, Micronesia. Roots are crushed to powder (*right*), mixed with water and strained through a cloth (*left*).

the three colors to the other two that in effect produces the white light, and, consequently these are called the additive primaries. A second set of primary colors, red, yellow and blue, are related to subtractive color mixture, since each color subtracts its complementary from white light. Technically, the subtractive primaries are not red, yellow and blue but magenta, yellow and cyan. The magenta absorbs green, the yellow absorbs blue, and the cyan absorbs red, resulting in black since all light has been subtracted.

Reflection and Scattering of Light

Most ordinary objects absorb differing amounts of light of differing wave-lengths and our perception of a particular color is a result of the sensation produced by the light that is not absorbed but reflected. The red book-cover has a coloring material whose physical structure is such that it absorbs all light but that wave-length which produces red. Another aspect in the distribution of wave-lengths is scattering. The color of the blue sky is affected by the relative scattering of sunlight by the atmosphere. Variations in the density of the atmospheric gases scatter the shorter wave-lengths at the blue end of the spectrum more than they scatter the longer wave-lengths. When the sun is high in the sky, enough short wave-lengths are present to make the sky appear blue, but early or late in the day, the sun's rays strike the earth more obliquely, passing a much greater distance through the atmosphere and causing the longer wave-lengths to be more apparent, with a consequent change in color to yellow, orange and red.

Continued on next page

When a painter paints with oils or watercolors, a dyer colors his cloth or a lighting technician uses color filters, each modifies a white or colored surface in such a way that it takes on further color. Usually this is achieved through the use of pigments or dyes whose color relies on the principle of subtractive mixture, and this is why to most of us "red, yellow and blue" are the primary colors.

Interference, Diffraction and Polarization

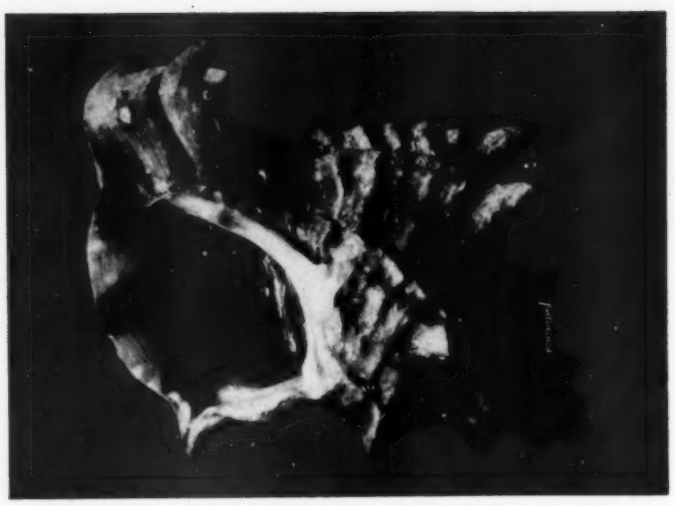
In addition to refraction, in which we see the spectrum produced by light through a prism, the spectrum is seen in other phenomena such as interference, where a light ray reflected from the bottom surface of a film such as that found in a soap bubble or the oil slick on wet pavement, travels a slightly greater distance than a parallel ray reflected from the top surface. Some wave-lengths are weakened more than others as the crests of one wave penetrate the troughs of another, causing the interference. The spectrum is again seen when white light is separated by diffraction, achieved, for example, through the use of evenly ruled surfaces, called diffraction gratings, with the rulings sometimes so close together they are invisible to the eye yet effectively diffract the white light. In the former, the molecules of a fluorescent material absorb radiant energy of one wave-length and re-radiate it as another wave-length; the radiant energy thus absorbed frequently comes from outside the visible spectrum, as in the instance of "black light." Stage costumes that glow in the dark under ultra-violet radiation from lamps with filters that absorb the visible radiation and re-radiate ultra-violet radiation are dyed in such a way that the invisible ultra-violet radiation is returned from the costume itself as a visible color. Even more intricate is polarization, in which light is said to be polarized or non-polarized depending on the relation of reflected light to refracted light; as a visible phenomenon, it may be observed in material with a pronounced lustre or sheen.

With our perception of color dependent on the behavior of wave-lengths and their phenomenal peculiarities, it is not surprising to find these peculiarities amply represented in nature as well as in the physics laboratory. The iridescence in mother-of-pearl and in the plumage of certain birds and insects is the result of interference and diffraction, while the spectacular effect of cut crystal – and of diamonds – is due to prismatic refraction.

Nature and Color Chemistry

Color is a child not only of light, but of the material characteristics of whatever it is the light falls upon. The red sweater, as a phenomenon of physics, is red because all wave-lengths but one are absorbed, yet the wave-length must be "excited to actuality" in some way, and, in fact, the sweater's redness is dependent on the dyeing of its fibers. The molecular structure of the particular substance in which it is dyed in a sense predetermines what wave-lengths shall and shall not be absorbed and reflected, a process confined to chemistry.

The ancient Egyptians were among the world's first and most accomplished color chemists, using the earth's natural resources for a marvelous variety of coloring materials to dye their clothes and their hair, and paint their bodies. Dioscorides, Theophrastus and Vitruvius all have things to say about dyes and dyeing methods in Greco-Roman times, but the richest literary source of the ancient world is Pliny's *Natural History* in which which he tells not only from what animals and plants particular dyes were made but, even more valuable historically, recipes for such famous dyes as indigo and the elusive purple made from the murex shells found along the Mediterranean shores of Europe, Africa and Asia Minor.



Murex trunculus, a shell-fish from which a purple dye was once extracted. Such dyes are now produced chemically.

Purple, in its rarity, became the prerogative of kings; they were crowned in robes of purple, and buried in sarcophagi of porphyry, the reddish-purple rock expensively mined in Egypt. Dyes and pigments were a major factor in the economic and political shifts of power that marked the transition of medieval Europe from a feudal to a commercial society. Wars were fought, new dye and pigment sources found, and new compounds invented when in the middle of the 19th century the accidental discovery that dyes could be made wholly from coal tar compounds dissolved in a breath the whole system of natural dyes and pigments that had served the commercial world for centuries.

From Alchemy To Chemical Colors

Alchemy, in the popular imagination, is associated with quackery and occult mysteries but alchemy is also the respectable parent of chemistry. The practice of alchemy, known to the early Greeks and probably to the Egyptians, was initially concerned with the transmutation of base metals into gold and, although its ethics became increasingly tarnished during the Middle Ages, alchemy developed many of the technical methods and much of the apparatus of present-day chemistry. Coupled with alchemy's naive belief in the philosopher's stone was a very practical discovery which, at a very early date, influenced the chemical creation of color. Alchemists noticed that on dipping hot metals into their various mordant baths they acquired unusual colors, or became "dyed." Eventually, the colorers of metals and dyers of fabrics were in an identical business, and today we speak not only of "dyeing" fabrics but the term is also used for the process by which anodized metals are colored.

The colors of our clothing, wallpaper, automobiles, the covers of the books we read, of everything in which color is not the direct result of natural creation, are the product of either dyes or pigments. Distinctions between the two lie chiefly in the nature of the substance; dyes are organic and

Edward Kallop is Associate Curator of the Department of Exhibitions at the Cooper Union Museum. His article is excerpted from the introduction to the catalogue of the Museum's current summer exhibition – *The Logic and Magic of Color*. This stimulating and clarifying exhibit should be seen by all who work with fashion and textiles.

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soluble while pigments, with certain exceptions, are inorganic and insoluble. Prior to the mid-19th century, both relied on an assortment of animal, mineral and vegetable sources with the same source frequently capable of producing either a dye or pigment. The earliest dyes were probably discovered by accident and may have been stains from berries, fruits and nuts used as food. Dyeing as an art seems to have independently developed and been practiced among primitive peoples everywhere. From simple origins, dyeing quickly became a relatively complex chemical procedure often requiring several days of boiling, filtering and oxidization. Most dyes relied on the action of mordants to make them "fast," or firmly adherent, with the customary mordant a soluble salt of aluminum, iron or tin.

Among the great names in natural dyes were madder, kermes, and cochineal for red, weld for yellow, murex for purple, and woad and indigo for blue. Nearly all dye sources were plants or animals and at an early point in the history of dyeing it was realized that plant dyes adhere most successfully to plant fibers and animal dyes to animal fibers. Minerals, on the other hand, were almost exclusively raw materials for pigments.

While many pigment sources, such as malachite and lapis lazuli, are familiar through frequent use in their natural state, others are generally unrecognizable. These are what medieval writers classified as "artificial" pigments, manufactured salts such as vermilion, a compound of mercury and sulphur, or verdigris, produced by treating copper plates with the acetic acid vapors given off by vinegar. By modern standards, the manufacture of both dyes and pigments in the past must have known its share of incalculable risks as the quality of natural substances was certain to vary and formulas were often loosely inexact.

Perkin's Discoveries

Synthetic dyes owe their immediate origin to William Henry Perkin, who as a young medical student in London attempting to prepare quinine synthetically discovered that his result was not the desired medicine but a blueish-red dyestuff obtained from the distillation products of coal tar. Perkin's first aniline dye was a violet-colored mauveine, "Perkin's mauve," and its commercial manufacture began in 1857, only a year after its discovery. Soon, an aniline red was developed, later called fuchsine or magenta, then further experiments saw the conversion of fuchsine into violet, blue and green derivatives. Dyestuff chemists worked empirically with little real knowledge of the chemical structure of the molecules involved and why they behaved as they did. In 1869, Friedrich Kekulé published a formula which held that a hexagonal ring structure may be assigned to benzene, and from C_6H_6, six parts carbon and six parts hydrogen, is derived the molecular constitution of benzene. Kekulé's theory became the foundation of benzene chemistry and of all subsequent dyestuff research.

Synthesized alizarin and azo dyes were born in 1868 and 1877, and one of the greatest triumphs of dyestuff chemistry was the later synthesis of indigo. Pigments, always closely related to dyes, were drawn even closer within the framework of organic chemistry and dyes and pigments together share the practical results of chemical compounds which solely through the molecular arrangement of elements produce the astonishing variety of colors that are manufactured today. Research, however, just as in the old days of the alchemists, is a never-ending quest, and as the past hundred years have witnessed extraordinary developments in the physical creation of color, present-day science invents not only new colors but new materials, materials offering new challenges to color chemistry.

Visual Phenomena, Systems and Color Measurement

Color, wave-lengths of light reflected from material objects, is seen by the human eye. With its complex physical apparatus, the eye forms an image of the color as a wave-length of light on the eye's retina, a lens that is the rear surface of the eyeball, immediately causing an electric disturbance which activates special light-sensitive elements within the retina. Connected with the brain by the single optic nerve behind each eyeball, these elements are the rods and cones. How, precisely, rods and cones separate one color from another is unknown, and while physiologists do know that cones are responsible for color vision and rods for vision that merely distinguishes degrees of light and dark, they can only speculate on the nature of the process of color selection.

The phenomenon of color mixture indicates that the retina must respond in at least three different ways to different colors. Still the most widely accepted general explanation is that of Young and Helmholtz, who concluded there must be three distinct kinds of cone receptors, separately responsive to either red, blue or green wave-lengths. All other colors were conceived as blends of differing degrees and proportions on the part of these three, a mutual interaction accounting for non-primary colors, while color-blindness, according to the Young-Helmholtz theory, is caused by peculiar deficiencies in one or more of the three sets of cone receptors.

Visual phenomena were long ago empirically understood by artists and craftsmen. The knowing use of red-green contrast-enhancement by Delacroix is certainly matched for brilliant effect, for instance, in specific 15th-century Spanish textiles while both Alberti and Filarete, important figures of the Renaissance in 15th-century Italy, wrote that with red next to green, each enhanced the vividness of the other. The 19th century saw the formulation into rational principles of these empirical practices, and the culmination of "scientific" painting was reached with Seurat, who, relying on what he called "the simultaneous contrast of colors," related his pointillist technique to the theoretical ideas of Chevreul.

Chevreul and Color Systems

Chevreul, director of the Dye Works of the French Gobelins factory, set out to discover why there were complaints about the quality of certain colors prepared in the Gobelins' dyeing laboratories. His investigations led him to conclude that "the want of vigor" imputed to particular

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This 18th Century engraving shows cloth being dyed by hand in a contemporary dyehouse.

colors was "owing to the colors contiguous to them, and that the matter was involved in the phenomena of the contrast of colors." Chevreul wrote a monumental treatise based on his findings that not only influenced the course of impressionist and post-impressionist painting, but also acted as a spur to the century's increasing scientific concern with color. Typical of this concern is a criticism of Chevreul's method from a later work, *Field's Chromatography:* "Chevreul went entirely by the judgment of the eye. This method is open to much objection, as even the most carefully trained eyes are liable to be misled, and influenced by association." Out of this kind of critical approach have grown a number of intricately detailed color systems, with the two best-known and most frequently-used today called, after their founders, the Ostwald and the Munsell systems. Less generally familiar is the equally important, and somewhat more specialized, CIE (Commission Internationale d'Eclairage) system, which has developed the chromaticity diagram, a horseshoe-shaped map whose outer boundaries represent the pure spectrum colors in relation to each other.

Both the Ostwald and Munsell systems rely for color gradations on three specific concepts: hue, value and chroma. Hue defines the color in relation to the spectrum, whether it is red, or green or orange and so on; value is the relative degree of light or dark, ranging from white to black; and chroma describes a particular color's intensity, whether it is a very dull or extremely brilliant color. Frequently, color scientists substitute brightness and saturation for value and chroma.

The measurement of color, or colorimetry, is a demanding discipline vital to the unknown millions who have ever tried to match a particular color with more of the same, as well as to all in the manufacturing world whose livelihood may depend on a color's constancy, to the maintainers of safety color codes, and even to graders of commercially processed foods. Related to measurement is the identification of the elements of chemistry on the basis of color, with helium initially discovered through its identifying yellow color; and color is an integral and complex part of Quantum Theory.

Designations for Color

Highly specialized colorimetry prefers letters and numbers to actual names for color designations. A dark green-yellow in the Munsell system, for example, may be described by GY 3/8, in which 3 specifies value and 8 chroma. This is a long way from the designations used in what is perhaps the earliest system for color standardization we know: heraldry. The familiar color terms in medieval heraldry, *or* for gold, *argent* for silver, *sable* for black, *gules* for red, and so forth, were closely connected with the overlapping symbolism of the period and may have stemmed from Aristotle's transposition of the names of the seven planets to metals and colors. In practice, however, the color terms in heraldry were apparently represented by conventional rendering; *argent* by unfilled space, *or* by dots, and vertical, horizontal or diagonal lines with combinations of the three for the remainder. Heraldic colors were, consequently, not only standardized in terminology but recognizable solely on the basis of a simple system of lines and dots.

Standardization is equated with stability, a permanence which in its flexible accommodation of all the variations of value and chroma attached to a hue nevertheless establishes a fixed order of distinctions that is completely unaffected by the associative ideas inevitably related to color names. Names, however, are the garb of fashion whose soul is change. *The Dictionary of Color* by Maerz and Paul lists over four thousand color names. Colors popular ten, twenty, a hundred years ago have been forgotten and we might believe that "nankeen," a great favorite in the 18th and early 19th centuries, is a color forever lost until we realize that only the name and not the color is gone. Fashion's constant search for uniqueness demands unique colors and such is the color "consumer's" psychological reaction that he will often accept as unique what is in actual fact a familiar color with a new name, a fiction compounded when individual manufacturers and professional employers of color formulate their own "unique" color ranges.

The eye, filtering and transmitting light waves to the brain which produces sensations of color, is physically incapable of the exacting measurement of color. Yet because of the peculiar interaction between the eye's physical function and psychological responses in the brain, any personal evaluation of color is a conceptual process whose sole "mechanical" tool is the eye. Optics and color measurement become the bridge between physics and metaphysics, the certain wave-length of light and the uncertain response in the human brain.

Color and Human Response

The magical properties of color are even today, among less medically advanced peoples, a fixed part of cures for diseases. Frazer, in *The Golden Bough,* tells of an elaborate ceremony once practiced in India for the cure of jaundice in which the yellow color was banished to yellow creatures and yellow things, such as birds and the sun, and to procure for the patient a healthy red color from a vigorous source, usually a red bull. A priest, reciting an appropriate Vedic hymn, performed a series of rites that relied on physical contact between the patient and the dead bull's blood, hair and skin. For cures, and especially as preventive protection, probably nothing in the magical world has ever surpassed gems. The brilliance of cut and polished stones, often so different from their initial drab appearance, is in itself a magical achievement that borders on sorcery.

Black, white and red, a triangle in which red is always at the apex, served Goethe for his quasic-scientific color theories as well as they did the Greeks, and they are essential symbolic colors in innumerable primitive rites. Red is the color "par excellence," comments Kouwer. Its chromaticity has the maximum concentration; with red, reason is replaced by the irrationality of action and the dynamics of the

LEFT. The "Plictho de Larte de tentori," a book on dyeing, was published in Venice in 1540 and was an important influence on the dyer's craft. The 18th Century illustration shows the cultivation of the woad plant, a major source of blue dyestuff in the Middle Ages.

moment. It is impossible to keep red at a distance or to rationalize it.

Red is a symbol of life in its animal, corporeal aspect, of fever as well as glowing health, of masculinity, aggressiveness, evil and sacrifice. It is the color of Bacchus in his role as god of regeneration. Red is almost always, in its ultimate symbolic derivation, associated with blood, shown not only by philological comparisons of word roots but by its extensive use as visual symbolism.

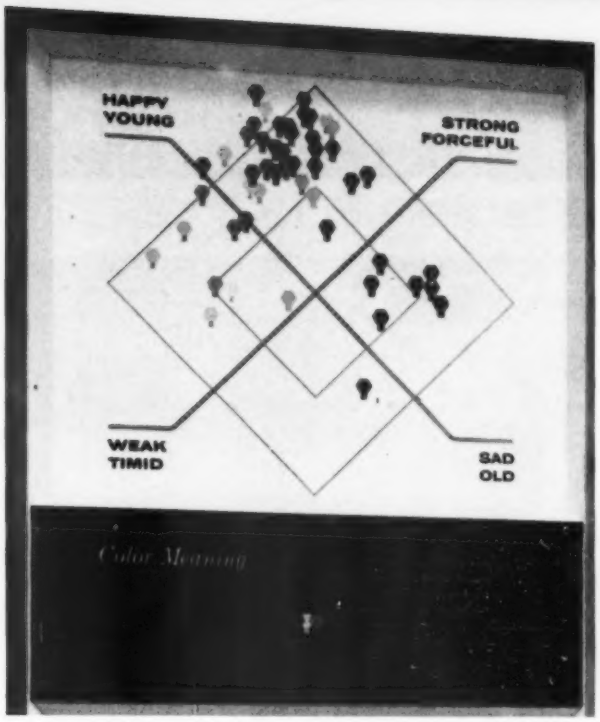
During the Middle Ages, that great era of symbolism, all colors were endowed with meaning and red assumed its secular place as the preserve of kings and princes and its religious significance for the Holy Blood and the Triumph of Christ at the Resurrection as well as the sacrifice of martyr saints, and the church adopted red as a canonical color for feasts commemorating sacrifice.

For the Chinese, red is the color of joy and good fortune. In India it is a color for weddings; and an ancient Hindu gem treatise asserts that to kings alone were allowed two varieties of colored diamonds, "those red as coral and those yellow as saffron." The Indians of North and Central South America use black, white, red and yellow to distinguish the four points of the compass. Of all "chromatic" colors, those other than gradations of black and white, yellow is the one most consistently allied with red, the two appearing as constant companions in Oriental symbolism, and, in nearly all languages, are the first of the "chromatic" colors to acquire distinct names. This phenomenon is attributed to the relative conspicuousness of red and yellow as opposed to green and blue, the most commonly found colors in nature and, as a consequence, colors that recede in our conscious awareness. Goethe called blue "ein reizendes Nichts" (an alluring nothingness), and almost everywhere blue is the last of the primary colors to be indicated by a special term, with some peoples having no names for blue other than "like the sky."

Synesthesia and Color Preference

Language is, however, an uncertain measure of the quality of color perception. The African pygmies of the Ituri forest in the Belgian Congo have no specific name for green, which is "like the leaves," and differing colors dark in value are all regarded as black, yet they make clear distinctions among particular shades of colors such as white and brown, distinctions that are not always apparent to our own differently conditioned eyes. Terminologies may be simply a means for vocal expression of a much deeper color-perception process that involves several of the senses, a unity of function to a point where one is able to say "not that my senses but that I perceive," red or blue or green. This unity, or synesthesia, has no agreed-upon physical or even metaphysical explanation, yet it has been recognized as a phenomenon since at least the time of Aristotle, and the numerous attempts throughout history to create a color music have been one of its chief visible symbols.

In spite of psychological conditioning on the part of advertising, the "consumers" of color still have color preferences that are synesthetic in origin. Colors are "warm," "cold," "hard," and "soft," and as one person views a particular color as warm, another sees it as cold. Preference even extends to a point where one who favors warm colors will choose warm shades of such cool colors as green and blue, and another who favors cool colors will have a reverse preference. Individual color preferences are part of a larger, a mass preference and each feeds on the other. Color choice is subject to influences that are entirely non-psychic in origin; imaginative theatrical costuming, the paucity of dyes and pigments in



One of the interesting displays in the Cooper Union color exhibit is this chart which shows the emotional impact of different colors as related to advertising. The findings were based on a motivational research study conducted by Social Research, Inc.

wartime, technical developments in creating new colors and developments in lighting techniques that affect the appearances of color, and even the arbitrary preference of a public personality. Geography and climate affect the color choice of whole groups of peoples, illustrated by the contrast between the bright intensity of colors favored in India and southeast Asia and the softer, muted colors popular in China and Japan. Strong, constant sunlight requires colors of strong intensity; any others are visually ineffective.

The Cycle of Fashion Colors

Through a mysterious interaction of all these forces, certain colors become fashion, a process so real that not only decades but centuries are often conceived in terms of particular colors. Within these arbitrarily defined units, fashion is never still, constantly shifting, but shifting in what appears

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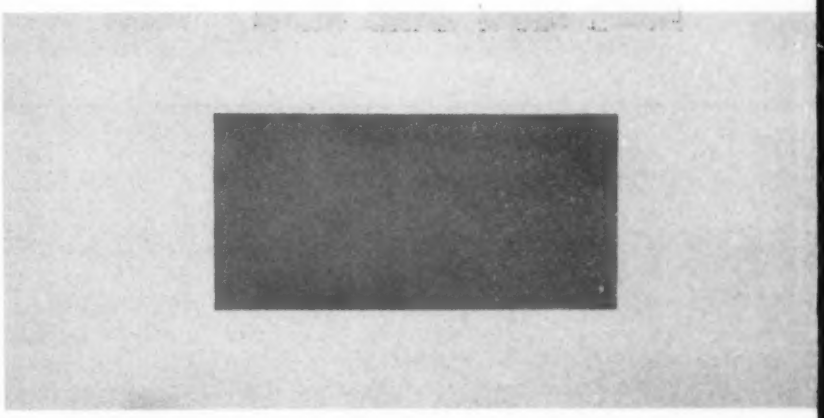
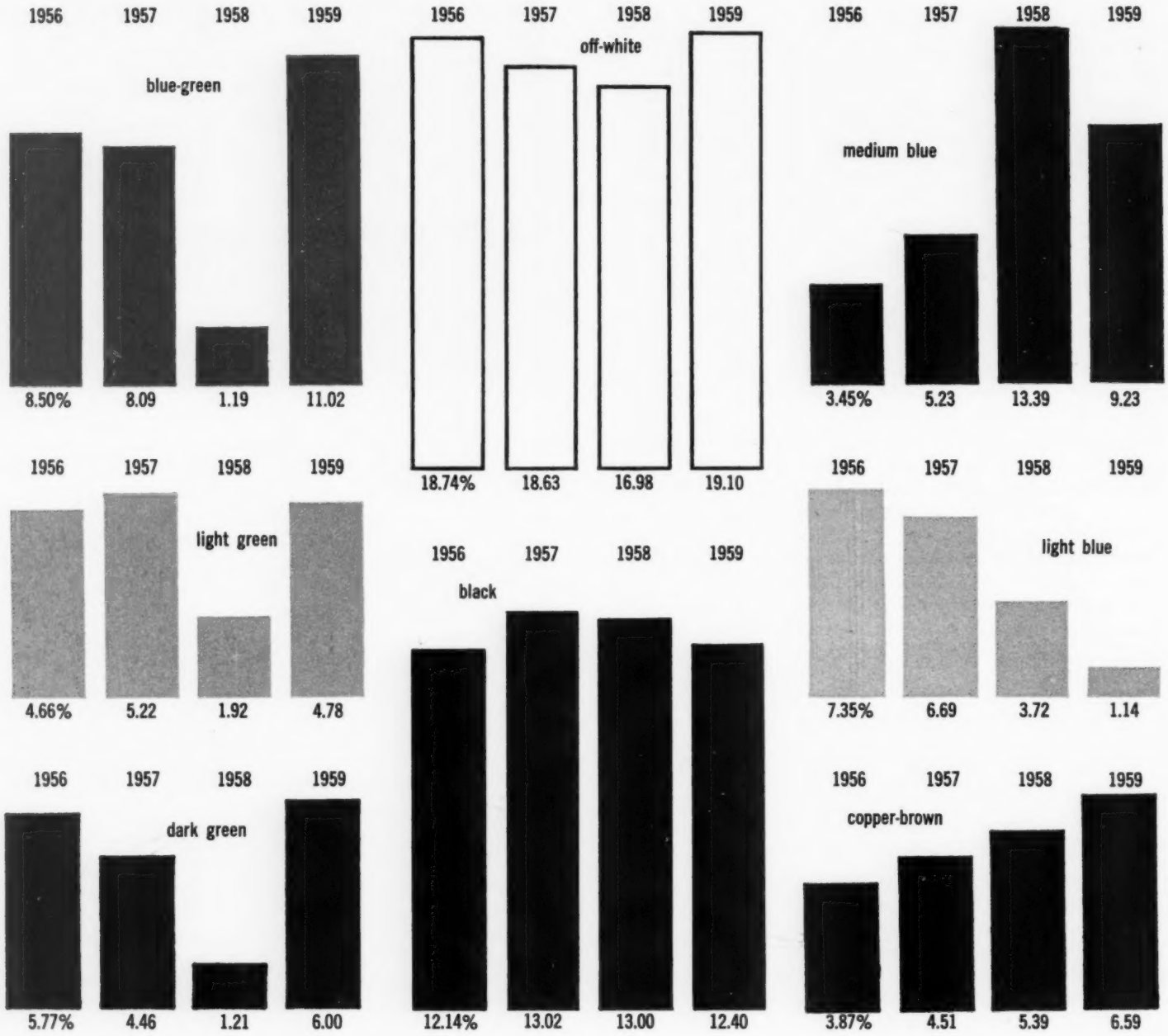


Chevreul maintained that "the want of vigor" in a particular color was due to the adjacent colors. This is born out by the accompanying demonstration. The two center blocks of light brown are exactly the same but look different on the two different ground shades.

GRAPHIC PROJECTION SHOWING FLUCTUATIONS IN AUTO COLOR PREFERENCE FOR PERIOD FROM JANUARY, 1956 TO JANUARY 1960
(BASED ON PAINT GALLON CONSUMPTION)



COLOR *continued*

as quite definite cycles. "Kitchens and bathrooms were a porcelain and surgical white. Furniture was in natural wood tints, surfaced with colorless finish . . . things were, so to speak, as God made them – each object deriving its color from the material of which it was fashioned. . . . Turn now to the thoroughly painted home of 1928. Here so utilitarian an object as a sink was purchased from a color range of T'ang Red, Orchid of Vincennes, Ivoire de Medici," and so on. This quotation from *Fortune* of February, 1930, could easily have been written in 1960, and the "thoroughly painted home" not 1928 but 1958. A general color cycle has been repeated and will doubtless be repeated again.

While the directional movement of color cycles may correspond to the color order of the spectrum, there appears to be a very definite correlation of color fashions among clothing, interior decoration and, today, even automobiles, but it is difficult to say which sets the pace, how the influences are really transmitted, or whether each maintains a color cycle that is actually independent of its relatives, all questions in which psychology and its commercial periphery have indistinguishable roles.

As the data of psychology aim to lift scientific reason out of psyche's chaos, psychology must nevertheless always adjust, even submit to the forces of irrationality and become a part, with symbolism and language, of metaphysics. While the physics of color – color as light – and color chemistry – the creation of color through chemical means – are measurable, predictable, and to an extent controllable, the metaphysics of color, the complex reactions we have to color and why we have them, represent the final, and determining, stage in our perception of color. – EDWARD KALLOP

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ONE OF THE WORLD'S GREAT TEXTILE TREASURES

LA VUE (SIGHT)

The Lady with the Unicorn
TAPESTRIES
From the Cluny Museum in Paris

Cluny Tapestries

LEFT. A detail from the panel *le Gout* (Taste) reveals the intricate decoration and rich embroidery which was woven into each of the hangings. The grace and beauty of the composition compares favorably with that of the great Renaissance paintings. Here the lady reaches into a bowl of sweetmeats to symbolize the act of tasting. A falcon perches on her hand.

ON THE PREVIOUS PAGE. The panel called *la Vue* (Sight) shows the lady (perhaps Claude le Viste) holding a mirror in which the unicorn sees itself reflected. The lion holds a standard bearing the arms of the house of le Viste. Realistic animals, flowers and greenery, executed with great fidelity, give the scene a rich texture.

One of the

World's Finest Examples

of a 15th Century

Mille Fleurs Tapestry

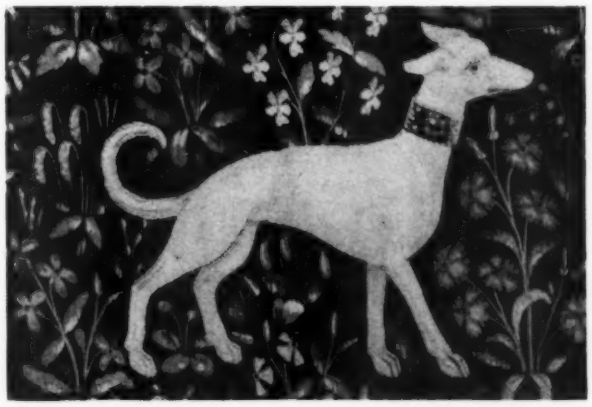
The "Lady with the Unicorn" tapestries are show pieces in the impressive collection of mediaeval art housed in the beautiful Cluny Museum in Paris. They are often compared with the "Unicorn" tapestries in the New York Cloisters Museum since both belong to the same school of "Mille Fleurs" (Thousand Flowers) or Gothic Verdure tapestries. Among connoisseurs there are partisans for each.

The work dates from about the year 1500. Neither the artist who created the cartoons nor the craftsmen weavers who executed them are known, but they are ascribed to the ateliers of the Loire School.

More is known about the original owners. There is every reason to believe that they were commissioned by one, Jean de Chavannes-Vandenesse as a wedding gift for his bride, the Lady Claude le Viste of Lyons. The arms of the le Viste family appear in each of the hangings. Later, the tapestries were owned by the Rilhac family and hung in their chateau at Boussac, where they were admired and described by the writer, George Sand. In 1882 they were acquired by the Cluny Museum, where they are now on view.

The group consists of six tapestries, woven of silk and wool. In scale they are each just over twelve feet high and from nine-and-a-half to fourteen feet wide. In color they sing out from the walls of the Cluny in a rich panoply of rose reds and deep blues.

Most interesting is the subject matter of the hangings. It is a romantic and allegorical interpretation of the



A Mon Seul Desir

five senses. The central panel is called "A Mon Seul Desir," which may be roughly translated "To My Own True Love." Each of the other five panels illustrates one of the five senses – *la Vue* (Sight), *l'Ouie* (Sound), *l'Odorat* (Smell), *le Gout* (Taste) and *le Toucher* (Touch). In each appears the lion and the unicorn, mediaeval symbols of nobility and purity. Throughout, the beauty of the composition makes the Cluny tapestries one of the great textile masterpieces of the world.

This hanging illustrates the sense of sound *(l'Ouie)*. While her attendant pumps the bellows, the lady plays the organ. She is elaborately gowned and bejewelled and wears a headdress enriched with pearls and aigrette feathers.

Details shown at left and below are taken from the central hanging called "A Mon Seul Desir." They reveal the careful draughtsmanship and great skill which went into the design and execution of these imposing tapestries.

Cluny Tapestries

The LION Symbol of Strength & Nobility

The sense of taste *(le Gout)* is the subject here. The wooded island on which the central figures stand is executed in deep blue, while the background of the hanging is a rich rose-red. The same basic color harmonies are used in all six hangings, accented with the highlight colors of flowers, animals, greenery and birds. One of the most admired aspects of these hangings is the beautiful proportions and variety of composition used in executing the lion and the unicorn. (See large details above.)

The UNICORN
Symbol of Chastity & Purity

This central panel of the six hangings has no specific reference to the five senses. It reveals the overall purpose of the tapestries – a munificent wedding gift from a wealthy man to his bride-to-be. Therefore, the lady appropriately stands before a mediaeval tent of blue and gold damask which is embroidered with the legend "A Mon Seul Desir" – To My Own True Love. Contemporary symbols of wealth and prestige are the pet dog on a pillow and the jewel chest held by the richly-gowned attendant.

Cluny Tapestries

Detail from the panel called *l'Ouie* (Sound). Note the unicorn decoration on the organ and the pattern of the fabric covering the table.

Detail from the panel called *le Toucher* (Touch). The mediaeval ball-and-chain is in sharp contrast to the idyllic quality of the scene.

The central figure in each of the six hangings is the lady, probably the bride-to-be, Claude le Viste. Her gowns and her jewelry reflect the fashions favored by the wealthy about the year 1500 when these tapestries were made.

The pampered pet dog, wearing a jewelled collar, is prototype of the pets which appear in many modern family portraits.

The sense of smell *(l'Odorat)* is symbolized by roses which the lady takes from a bowl held by her attendant and weaves into a floral crown.

In mediaeval times the fabled unicorn was thought to be very fierce but gentle in the presence of a virgin. It therefore became associated with chastity and also symbolized the softening influence of love upon the fiercest of men.

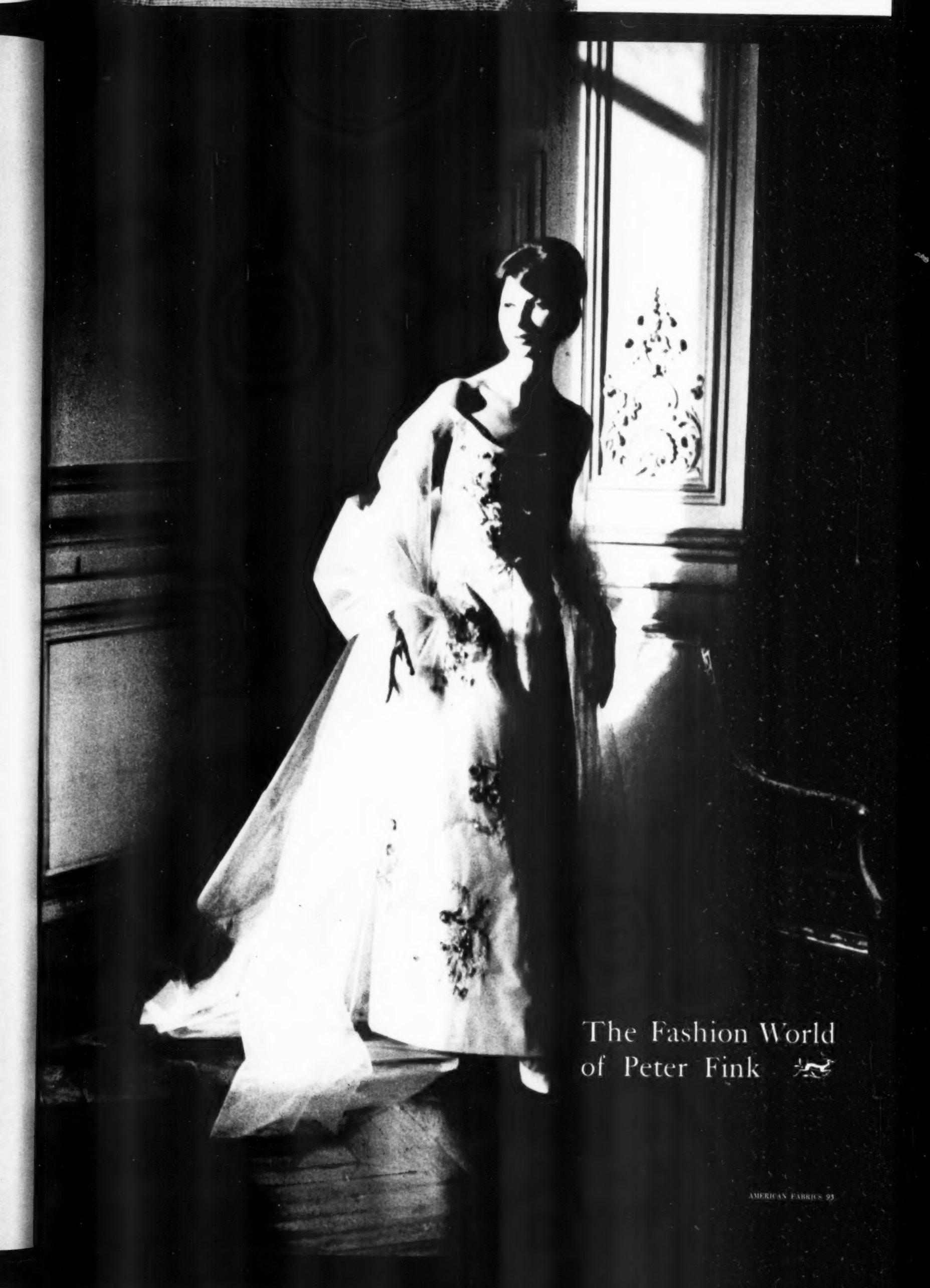
Inspiration for our Time

Today we live in a time when textiles can be produced by the mile and it is not likely that man will again have occasion to produce fabrics of the scale and detail we find in the Cluny tapestries. Nor is there need and fitness in our modern world for such hangings. But there *is* need for the love and for the craftsmanship, for the pride in work and the search for perfection which speak to us from these beautiful works. It has been estimated that three to four weavers spent three to four years producing one hanging of the size and complexity shown here. This is something to give us pause. Our modern technology can achieve wonders, but these wonders become worthless unless they are animated by the same heart and spirit which produced the Cluny hangings. For the textile designer these tapestries are full of inspiration, full of concepts and specified design ideas which have validity for our time. But on a deeper level they carry a more important message which we must learn to respect if our culture is to produce anything which can survive the critical ravages of four hundred and sixty years.

Cluny Tapestries

The sense of touch *(le Toucher)* is the theme of this quiet pastoral scene. The lady strokes the horn of the unicorn. Her changes of costume and jewelry through the six tapestries supply a fashion commentary for the period around 1500 when they were made by Loire weavers.

PHOTOGRAPHS BY BULLOZ



The Fashion World of Peter Fink

LEFT. "I took this picture at the Monet exhibit in Paris. The pale pink chiffon of the beaded gown matched the pale pinks in the Monet canvas. I wanted to get a feeling of softness."

ABOVE. "I took this picture on the Alexander III bridge. It gives the hooded cape by Ricci a sense of mystery and historical romance."

LEFT. "This was also a Ricci creation. Paris is filled with wonderful backgrounds like this. That's why it's such a delight to work there. You're never at a loss."

The Fashion World of Peter Fink

PETER FINK lives in the elegant world his pictures portray. It is a world in which he feels at home and as a result his pictures have an authenticity which few fashion photographers have been able to achieve. His own New York apartment – in a former East Side mansion off Fifth Avenue – is quite in keeping with the ornate, high-ceilinged ateliers near the Place Vendome. The brittle, creative world of haute couture, the world of sophisticated manners, of brilliantly successful designers and beautiful, fragile models, is a world with which he has a fine rapport in Paris or New York.

He is equally at home in both cities and works in both as one of America's leading photographers of fashion. His camera has covered most of the Parish fashion openings during the last few years and has taken full advantage of this most photogenic of cities.

Peter Fink came to photography in 1951. He began his career as a painter, later worked as a packaging designer with Lanvin and Lucien Lelong and finally found his true metier in photography. The pictures on these pages are selected from his most recent work – most of it done in Paris. They reveal his fine sense of composition and his rare feeling for elegance. Above all they document his belief that a fashion photograph should never show the stitches but should always create a mood. The comments under the photographs are his own.

"This picture was taken in an 18th Century chateau near Paris. I was very happy about the composition. The model, the at-home gown by Ricci, and the wonderful chair all harmonized."

"At the last Paris openings there was a great deal of interest in pleats and I wanted to show the different treatments designers achieved. The first and last of these three dresses are by Ricci. The center picture shows one by Sarmi. I think he is one of the great fashion designers."

LEFT. "This is Sunny Harnette, one of the greatest models I've ever photographed. She always looks as though the clothes were made for her and the home her own."

ABOVE. "To me this classic black dress by Chanel always looks chic and always steals the show. If a woman knows how to wear it, there's nothing more sexy."

LEFT. "I photographed Sophia Loren, wearing this Dior dress, in her own elegant apartment. She can act the grande dame as well as the street gamin when she wants to."

"This is Brigitte Bardot on the set of a new movie in Paris. It takes a long time to get her in the right mood but if you have the patience she is a wonderful subject."

Hector Escobosa of I. Magnin

Luis Estevez

Castillo of Lanvin Castillo

Men Who Make the World of Fashion

Peter Fink's portrait gallery reveals the faces of men who have far-reaching effect on what women will buy and wear

Ferdinando Sarmi

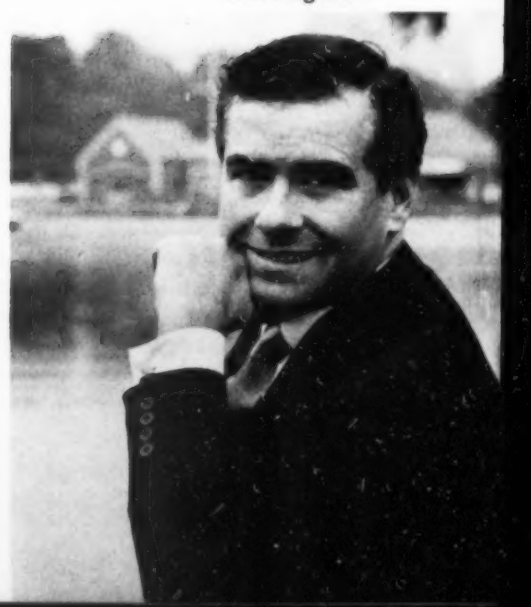
Hubert de Givenchy

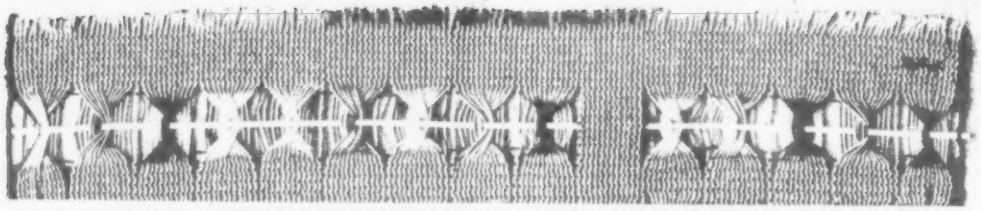
James Galanos

Rudy Gernreich

Pierre Cardin

Tom Brigance

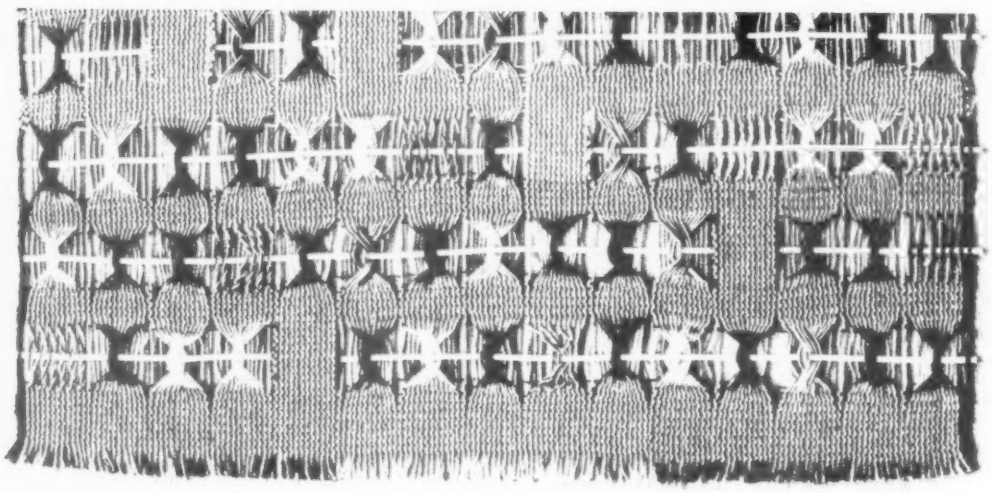




Anni Albers

on the DESIGNING of TEXTILES
and the Handweaver's Place in Industry

ANNI ALBERS is famous on two continents as a weaver, a designer of textiles, a teacher and a writer. She is the wife of the artist and teacher Josef Albers and both their careers are identified with that wellspring of modern design – the Bauhaus. Of her work, Arthur Drexler of New York's Museum of Modern Art, has said: "Anni Albers has long been considered by many the conscience of contemporary textile design . . . has inspired and influenced a generation of young American weavers . . . has provided standards with which to measure the creative work of the individual craftsman as well as the enormous production of the American textile industry. The above article is taken from her book "Anni Albers: On Designing" published by The Pellango Press, New Haven.



Anni Albers calls much of her work "Pictorial Weaving" and as such it has been exhibited in museums throughout the country. The work at right is called "Variations On A Theme" (34" x 30"). Collection: Mr. & Mrs. Theodore Dreier.

CONCERNED WITH FORM and with the shape of objects surrounding us – that is, with design – we will have to look at the things we have made. With the evidence of our work before us, we cannot escape its verdict. Today it tells us of separateness, of segregation and fragmentation.

An ancient Greek vase, though unsuited to any use today, still fills us with awe. We accept it as a manifestation of completeness, of true perfection. A bucket, fulfilling today somewhat the same purpose and functionally far superior to the ancient vessel, embarrasses us and we would blush were our cultural standards to be judged by it. We sense its incompleteness.

To restore to the designer the direct experience of a medium, is, I think, the task today. Here, as I see it, is a justification for crafts today. For it means taking, for instance, the working material into the hand, learning by working it of its obedience and its resistance, its potency and its weakness, its charm and dullness. The material itself is full of suggestions for its use if we approach it unaggressively, receptively. It is a source of unending stimulation and advises us in a most unexpected manner.

Design is often regarded as the form imposed on the material by the designer. But if we, as designers, cooperate with the material, treat it democratically, you might say, we will reach a less subjective solution of this problem of form and therefore a more inclusive and permanent one. The less we, as designers, exhibit in our work our personal traits, our likes and dislikes, our peculiarities and idiosyncrasies, in short, our individuality, the more balanced the form we arrive at will be.

It is better that the material speaks than that we speak ourselves. The design that shouts "I am a product of Mr. X" is a bad design. As consumers, we are not interested in Mr. X but in his product, which we want to be our servant and not his personal ambassador. Now, if we sit at our desk designing, we cannot avoid exhibiting ourselves for we are excluding the material as our co-worker, as the directive force in our planning.

The good designer is the anonymous designer, so I believe, the one who does not stand in the way of the material; who sends his products on their way to a useful life without an ambitious appearance. A useful object should perform its duty without much ado. The tablecloth that calls "Here I am, look at me," is invading the privacy of the consumer. The curtains that cry, "We are beautiful, your attention please," but whisper "though not very practical, we will need much of your time to keep us in shape," are badly designed. The unknown designer or designers of our sheets or of our light bulbs performed their task well. Their products are complete in their unpretentious form.

The more we avoid standing in the way of the material and in the way of tools and machines, the better chance there is that our work will not be dated, will not bear the stamp of too limited a period of time and be old-fashioned some day instead of antique. The imprint of time is unavoidable. It will occur without our purposely fashioning it. And it will outlast fashions only if it embodies lasting, together with transitory, qualities.

When we examine recent progress in cloth-making, we come to the curious realization that the momentous develop-

RIGHT: An Albers wall hanging from the Busch-Reisinger Museum, Harvard University.
BELOW: An Albers design executed by Inge Brouard.

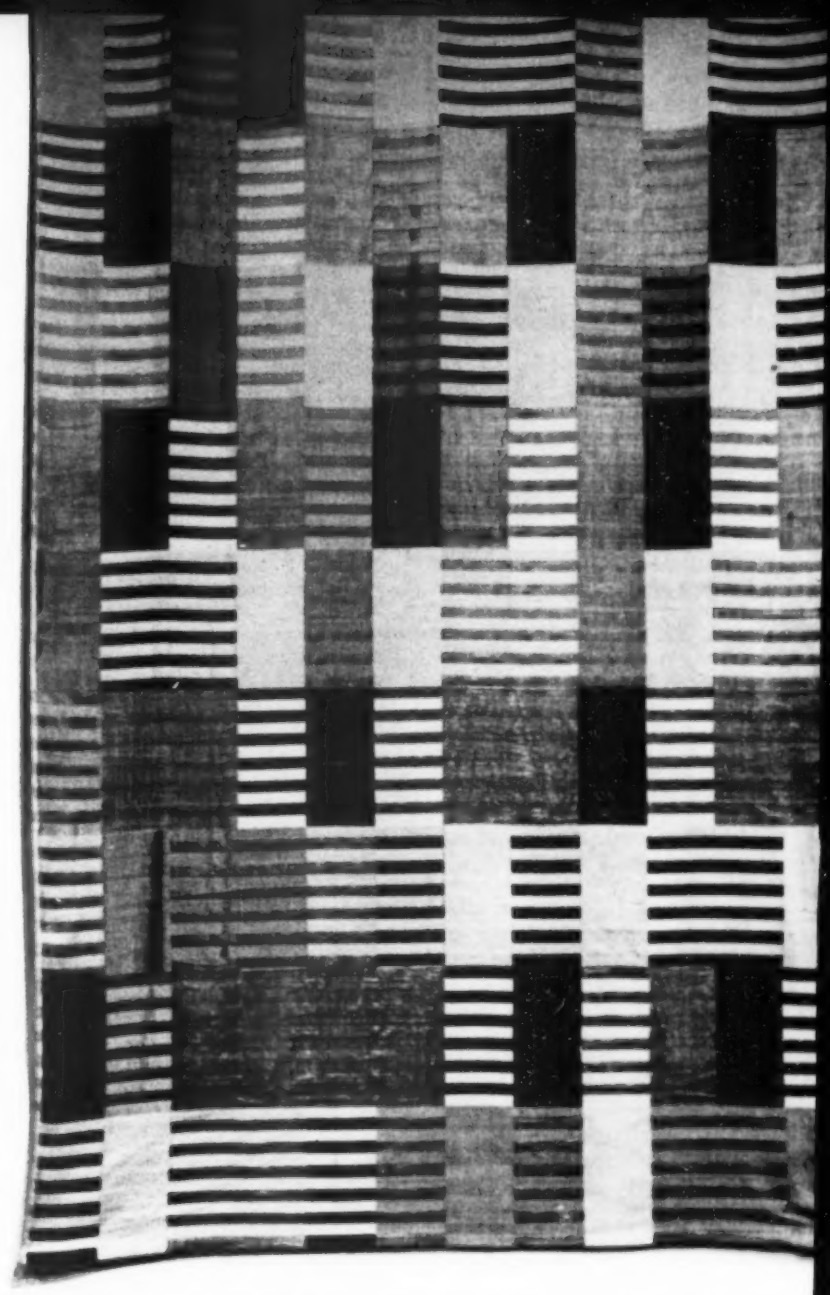
ment we find is limited to a closely defined area . . . the creation of new fibers and finishes. While the process of weaving has remained virtually unchanged for uncounted centuries, textile chemistry has brought about far-reaching changes, greater changes perhaps than even those brought about through the fast advance in the mechanics of textile production during the last century. We find the core of textile work, the technique of weaving, hardly touched by our modern age, while swift progress in the wider area has acutely affected the quality as much as the quantity of our fabrics. In fact, while a development around the center has taken place, methods of weaving have not only been neglected, but some have even been forgotten in the course of time.

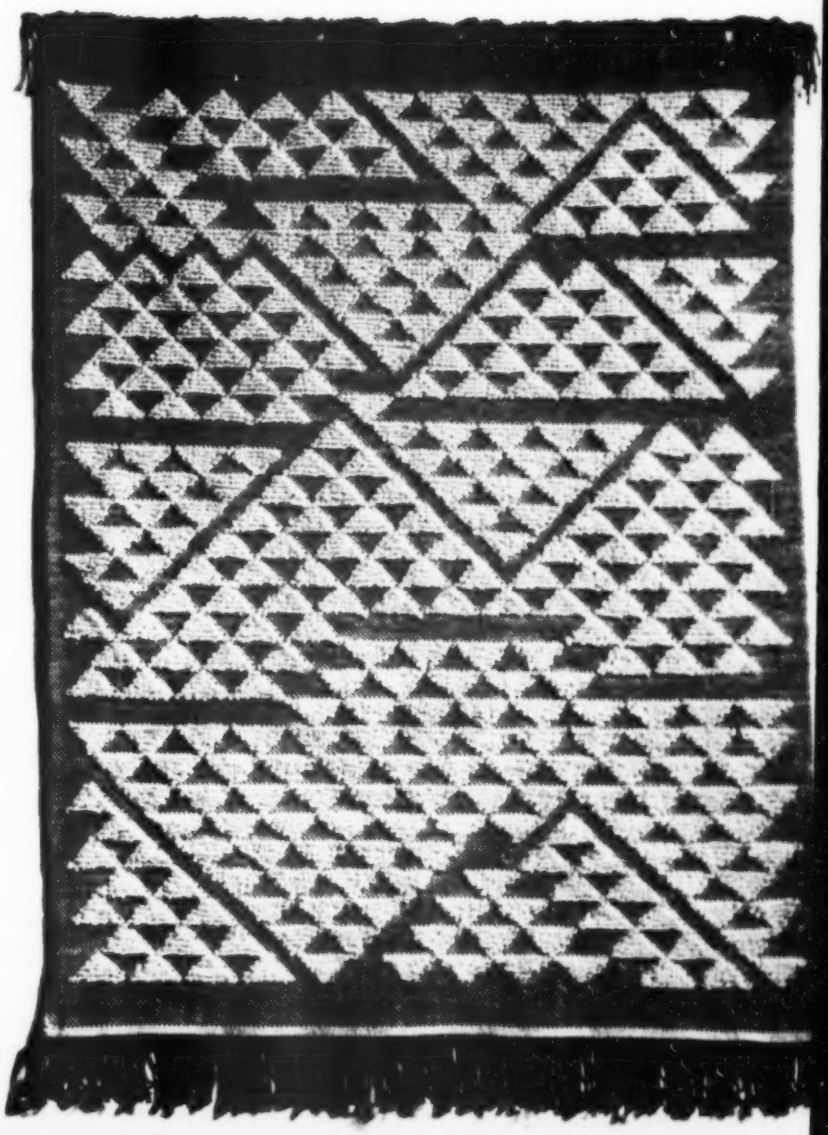
An impartial critic of our present civilization would attribute this barrenness in today's weaving to a number of factors. He would point out that an age of machines, substituting more and more mechanisms for handwork, limits in the same measure the versatility of work. He would explain that the process of forming has been disturbed by divorcing the planning from the making, since a product today is in the hands of many, no longer in the hands of one. Each member of the production line adds mechanically his share to its formation according to a plan beyond his control. Thus the spontaneous shaping of a material has been lost, and the blueprint has taken over. A design on paper, however, cannot take into account the fine surprises of a material and make imaginative use of them.

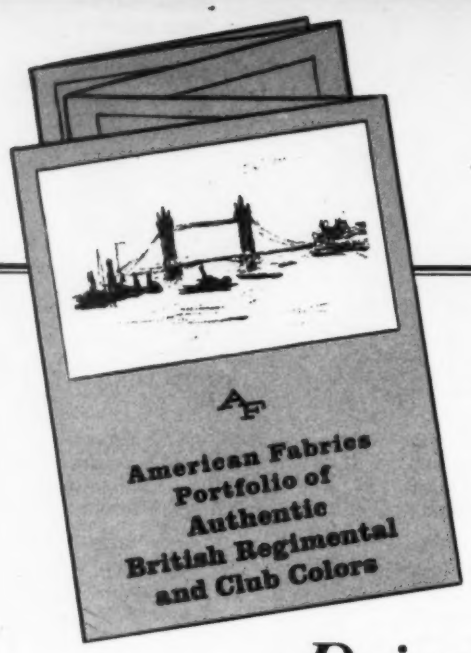
Though not in general admitted to the officialdom of industrial production, some hand-weavers have been trying to draw attention to weaving itself, as an integral part of textile work. At their looms, free from the dictates of a blueprint, these weavers are bringing back the qualities that result from an immediate relation of the working material and the work process. Their fresh and discerning attempts to use surface qualities of weaves are resulting in a new school of textile design.

The influence that hand-weaving has had thus far has been mainly in the treatment of the appearance, the epidermis, of fabrics. The engineering work of fabric construction, which affects the fundamental characteristics of a material, has barely been considered. It is probably again the task of hand-weavers to work in this direction. For just as silk, a soft material by nature, can become stiff in the form of taffeta, through a certain thread construction, and linen, a comparatively stiff material, can be made soft in another, so an endless number of constructional effects can produce new fabrics. The increasing number of new fibers incorporating new qualities creates a special challenge to try the effects of construction on them. Just as chemical treatment has produced fluorescence, so structural treatment can produce, for example, sound-absorption.

Industry should take time off for these experiments in textile construction and – as the easiest practical solution – should incorporate hand-weavers as laboratory workers in its scheme. By including the weaver's imaginative and constructive inventiveness, as well as his hand loom with its wide operational scope, progress in textile work may grow from progress in part to a really balanced progress.







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QUITE ASIDE from the historical value of such a portfolio, we believe the selection of these Regimentals can be of productive reference value because of the great care which has been used in determining the colorings and patterns. The fact that these British Regimentals and School combinations have for so many years held such importance in consumer goods is (and certainly so in this country) far removed from the sentimental attachment which one might feel for "the Old School Tie" or for a certain British Regiment.

The extreme care and color-sensitivity which led to the development of each Regimental design is evident in the rather wonderful manner in which colors were selected, blended and then spaced. In the men's industry British Regimentals have always been a favorite in such merchandise as neckwear, belts and hatbands; in certain areas of women's wear they have taken hold rather well in recent seasons. It is the belief of A. F.'s Fashion Department that a much broadened market awaits British Regimental designs . . . in silk, in wool, in cotton and in manmades; for men, for women, for students among both boys and girls, and even for home decoration.

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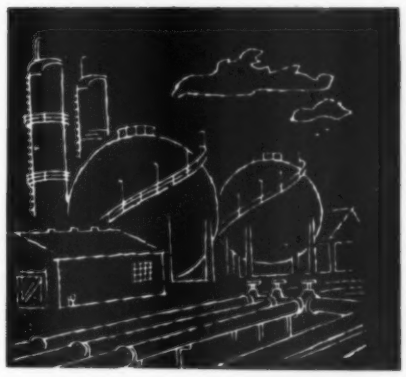
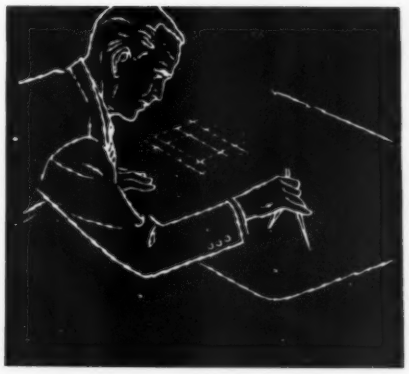


How a great industrial company

adds

FASHION to FUNCTION



The Search for Fabric Perfection

HOW FASHION IS ADDED TO FUNCTION

The United States Rubber Company is not a newcomer either to the world of fashion or to fabrics and fibers. With the recent expansion of its consumer fabrics division through branded U. S. Royal Textiles, the company is continuing a textile tradition which is now some 40 years old.

U. S. Rubber is already well known for its industrial textiles to large segments of industry – to tire and automobile manufacturing, to transportation, power, mining, etc. For such major groups these specialized fabrics are literally "sinews for industry." But in the fashion world too, it has made a significant contribution for three decades in the highly specialized field of elastic textiles. Here its famed elastic yarn, "Lastex" is a vital functional component in most corsets and swimsuits and is credited with revolutionizing both materials and design in many types of form-fitting apparel. More recently U. S. Rubber created another minor revolution in this field through the development of a synthetic elastomer, its new "Vyrene" spandex fiber. Used as the core of ultra-fine "Lastex" yarns it is creating very light and sheer elastic fabrics which are at the same time astonishingly durable.

A less well known but growing contribution of "function to fashion" is now occurring in the field of woven apparel fabrics where U. S. Rubber is now launching four lines of U. S. Royal Textiles – the result of several years of research and development on new fibers, blends, weaves and finishes. Contributing to this advance in consumer fabrics has been its Textile Division's experience in spinning both synthetic and natural yarns for the knitting and tufting trades.

The company's approach to fashion fabrics has been to start with research in depth on all existing fibers and blends in order to develop fabrics carefully engineered for specific end uses. Once the technical aspects of a fiber blend or a particular fabric have been thoroughly tested in U. S. Rubber's own research laboratories, the company's textile division mobilizes the creative talents of some of the best stylists in the fashion field in order to translate technique and performance into the exciting colors and patterns of fashion.

The result of this wedding between function and fashion

Research is at the heart of U.S. Rubber's industrial growth. Aerial view of the company's new research center at Wayne, N.J.

has been the creation of a family of fine apparel fabrics – marketed under the brand name of U. S. Royal Textiles – which has carved out for itself a special niche in the teen-age and junior market, in the children's field and in men's and women's sportswear.

These U. S. Royal fabrics have been enthusiastically received by the markets to which they were pinpointed, with the result that over 130 different manufacturers are now using them in their current lines. On the basis of this remarkable early success the company is now making plans to expand its research and development program into many other apparel fields.

In the following pages are recorded some of the reasons why United States Rubber and U. S. Royal Textiles have an important role to play in the apparel industry and in fabric merchandising.

"We favor a high standard of living for people everywhere, and we believe that this can be attained in great measure through the benefits of applied research and development."

– Policy Statement of
United States Rubber Company

United States Rubber and Textile Research

Research and inspiration are the keys to progress all the way down the line from *haute couture* to yarn and fiber; but without appropriate equipment inspiration cannot find expression and research is at a loss. And for research United States Rubber is superlatively well equipped, not only in textiles but in many related fields which dovetail with textiles today in building new fibers, chemical finishes, plastics and rubber compounds, and other accessory aspects.

The newest research unit of United States Rubber in Wayne, N. J. is a laboratory employing over 350 highly trained scientists and technicians who are engaged in research over a wide field. This laboratory possesses facilities for the most advanced programs in modern research, including use of the only privately owned and operated atomic reactor in the country, a two-million volt De Graaf electron accelerator, electronic computers, electron microscope facilities, etc. They have also, supplementing their own technical staff, connections with leading scientists in universities throughout the nation, for use when special consultation is required, or when contact with other basic research is desirable.

The Textile Division's main development laboratory is at Winnsboro, S. C., but this is aided by two other special labs – one at Hogansville, Ga., and the other at Gastonia, N. C. United States Rubber, in all, has at its disposal seventeen separate research and development laboratories in the United States, besides five in other countries. However, it is at the large and modern Winnsboro installation that most of the research and

(please turn)

RESEARCH FOR END USE

The main research building in Wayne, N.J. houses extensive facilities for the company's staff of over 350 scientists and technicians.

Specialized research for U.S. Rubber's textile division is conducted in this new research laboratory at Winnsboro, S. Carolina.

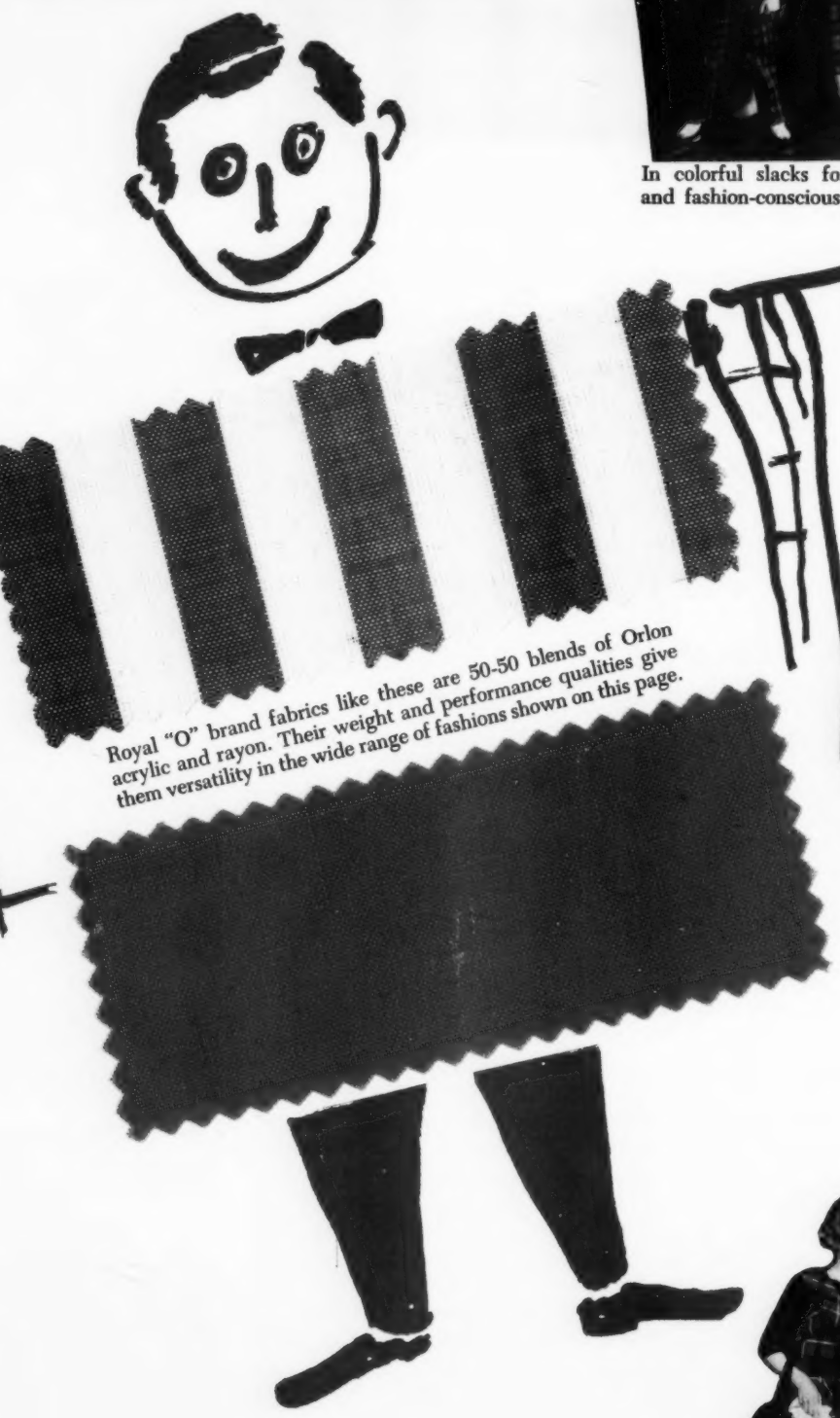
U.S. Rubber is deeply involved in the experimental development of new fabrics geared to the performance needs of special markets. Here are shown a few of its many textile facilities. *Upper left*, a box loom at the company's Winnsboro, S.C. mills. *Upper right*, high tenacity rayon tire fabric is woven at Scottisville, Va. *Lower left*, experimental dyeing in the research laboratory. *Lower right*, laundering tests are conducted on all fabrics from U.S. Rubber.

TRANSITIONAL FABRICS for the FASHION MARKETS

In hooded and lined coats for both women and children.

In colorful slacks for young tots and fashion-conscious women.

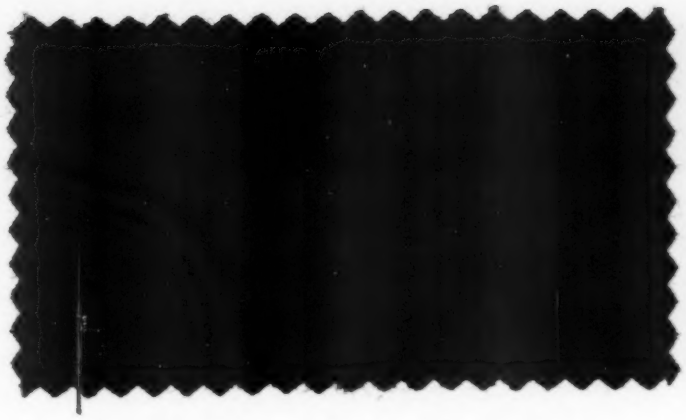
In skirts and sportswear, in durable coats for the junior market.



Royal "O" brand fabrics like these are 50-50 blends of Orlon acrylic and rayon. Their weight and performance qualities give them versatility in the wide range of fashions shown on this page.

Royal "O" wash-wear performance is a great asset in children's wear.

For classic dress-up clothes with an air of well-bred elegance.



"Gendarme" fabrics are blends of 50% Arnel Triacetate and 50% rayon, are machine washable.

Another "Gendarme" pattern with the madras look. The "Gendarme" group is distributed by Shirley.

(continued)

development is conducted on various textile programs. Here special processes, yarns, fabrics and blends are created and evaluated, and from this center have emanated such achievements as the Trilok "spacer" fabric with its woven-in air channels. Another example is its Springset carpet yarn with a completely random twist-set pattern which U. S. Rubber's textile engineers created by capitalizing on the thermoplastic properties of nylon. It is used as a tufting yarn to create a pile with exceptional cover and resilience.

United States Rubber and Fashion Fabrics

Today United States Rubber Company is offering both greige goods and finished fabrics within the scope of its trademark: U. S. Royal Textiles. Its fabrics are identified in the market and it has established its own standards for the trade. Based on extensive research and testing, U. S. Royal offers four versatile fashion fabrics under the following brand names:

1. ROYAL-"O", AN ORLON ACRYLIC AND RAYON 50-50% INTIMATE BLEND. FOR FINE COLOR AND HAND, FOR superlative wash-wear performance and for the whole range of consumer service qualities, this blend has met with wide success. The Orlon fiber adds soft drape to the fabric; the rayon complements it with utilitarian

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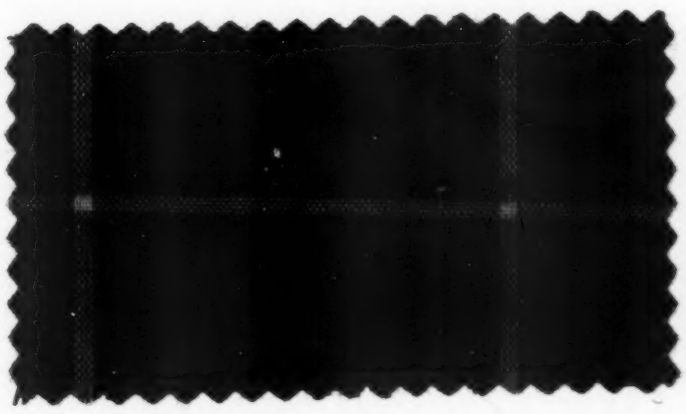
"Conquest" fabrics like this, are 50/50 blends of Acrilan acrylic and rayon, woven 45 inches wide.

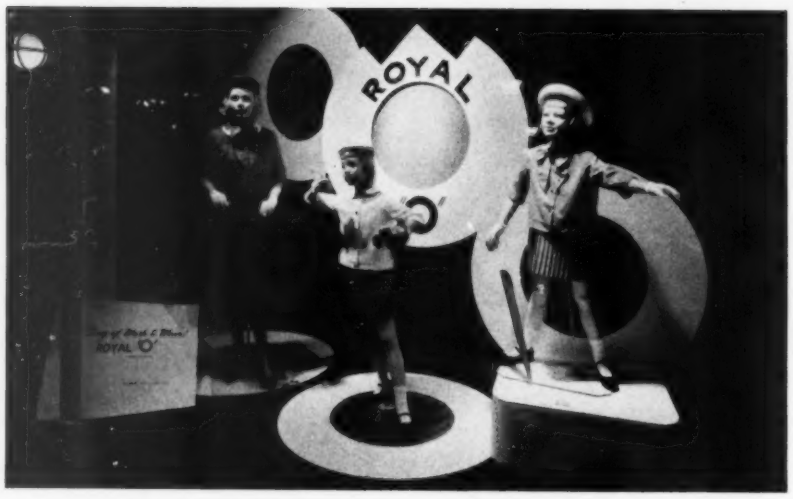
This subtle stripe is also in the "Conquest" group which is styled and finished by Fabrex.



One of many patterns in the "Bonanza" group which is marketed exclusively by Franklin Manufacturing.

"Bonanza" fabrics have a full-bodied hand. They are 50/50 blends of acrylic and rayon fibers.

U. S. ROYAL TEXTILES
in stores across the country



THE HIGBEE COMPANY, CLEVELAND

THE BROADWAY STORE, LOS ANGELES

SAKS FIFTH AVENUE, NEW YORK

FASHION to FUNCTION *(continued)*

virtues. Here once more, the U. S. Royal name certifies that the product has been well tried and truly tested before being offered. U. S. Rubber weaves and finishes this fabric and it is distributed by the Wm. Simpson organization.

2. CONQUEST, AN ACRILAN ACRYLIC AND RAYON 50-50% INTIMATE BLEND, STYLED AND FINISHED BY Fabrex, which offers fashion versatility, a fine hand and outstanding performance. This fabric has been widely used in children's wear, women's sportswear and dresses, as well as in men's sports jackets and sports shirts. The Acrilan gives *Conquest* its soft, smooth hand, outstanding machine washability and dryability, permanent pleatability and easy care. The rayon gives it weight, utility and price advantage. And the name of U. S. Royal assures the customer of quality and service.

3. GENDARME, AN ARNEL TRI-ACETATE AND RAYON 50-50% INTIMATE BLEND WHICH GIVES OUTSTANDing consumer service through its durability and machine washability, permanent pleat retention, wrinkle-resistance, plus a fine and supple hand. It possesses Arnel's stability and heat resistance, rayon's substantial service and price qualities. This fabric is specially woven for Shirley Fabrics by U. S. Royal.

4. BONANZA. THIS IS AN INTIMATE BLEND OF ACRYLIC AND RAYON FIBERS, A WASH-AND-WEAR FABRIC with an extra full-bodied hand, making it particularly suited to skirts, slacks and sportswear. This supple texture makes *Bonanza* resistant to wrinkling and causes the fabric to hold in pleats unusually well. *Bonanza* is available in both plaid patterns and in color-coordinated solids. A U. S. Royal woven fabric, it is sold only by Franklin Manufacturing Co.

• • •

These fabrics have been expertly styled in colored yarns featuring the plaid genre which has been strong over the last three years and continues to remain a classic in fashion popularity. They have been styled both towards the children's and the mature market. In the women's market they have had a special success because they have offered the first really transitional fabric in their class – that is, they have been designed to be worn right through the summer months and yet, because of their intermediary weight, man-made fiber content and type of yarns, they are able to extend their use deep into Fall and Winter.

Before volume production began on these fabrics, a quarter-of-a-million yards was test marketed and evaluated with manufacturers, retailers and consumers. In addition, the fabrics have been put through the most exhaustive wash-wear testing, not only in specialized laboratories, but in actual wear tests.

Preview of U. S. Royal Fabrics to Come

In the dynamic area of fabrics for fashion where the new synthetics and natural fibers are in such a fluid mix, new blends and weaves have already been evaluated and are in early stages of commercialization. While not officially on the market, it is no secret to leading cutters that U. S. Royal Textiles will soon include such intriguing fabrics as tropical and mid-weight suitings of Dacron/Corval, men's suitings of Dacron/wool and Dacron/Orlon, new sportswear weaves of Dacron/combed cotton and Arnel/viscose, and dress fabrics in Arnel/viscose and in Bondyne and Dynel constructions.

Into its textile program the United States Rubber Company projects the qualities of industrial *leadership*, extending over a century, which resulted in the formation of the present organization in 1892, and *experience* covering sixty-eight years, in perfecting products for a public of many millions of customers. Behind these is the goodwill of some 65,000 employees of the company, and a basic company concept aimed at creating a high standard of living for people everywhere.

U. S. Rubber in Textiles

Why is United States Rubber Company in textiles? It is a question often asked, and the answer begins with the fact that almost every rubber product requires some textile material in its manufacture. For this reason United States Rubber some forty years ago began to produce tire cord and fabric. Today through both its industrial and consumer output it ranks among the largest producers of textiles in the nation.

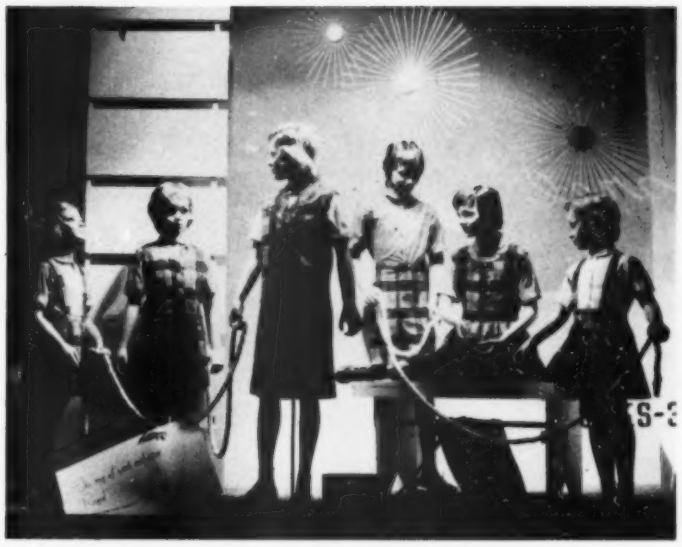
Starting some twenty years back to expand into markets other than tire cords, today nearly half the sales of the textile division are made to customers outside the company. United States Rubber also has an important share of the nation's business in acrylic and cotton knitting yarns, rayon, nylon and blended tufting yarns, heat resistant asbestos yarns and fabrics, elastic yarns and fibers, in addition to consumer fabrics.

This tremendous expansion has not been an accident of economics but has resulted from increase in sales due to quality of product, and the ability of the company to deliver goods of outstanding functional performance.

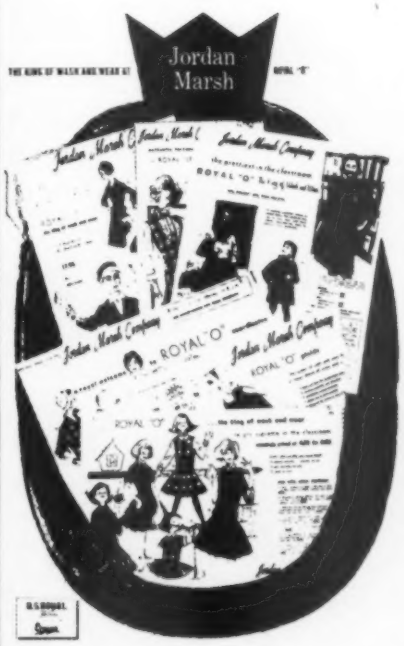
Registered trademarks used in this article: ACRILAN – acrylic fiber of Chemstrand. ARNEL – triacetate fiber of Celanese. CORVAL – cross-linked rayon fiber of Courtauld's. DACRON – polyester fiber of Du Pont. DYNEL – modacrylic fiber of Union Carbide. ORLON – acrylic fiber of Du Pont. BONDYNE – fabrics of Greenwood Mills.

U. S. Rubber trademarks: LASTEX elastic yarn; VYRENE spandex fiber; SPRINGSET carpet yarn; TRILOK spacer fabric; ROYAL-O yarns and fabrics; U. S. ROYAL textiles.

WINDOWS AND ADS tell the story to consumers



SAKS 34TH STREET, NEW YORK

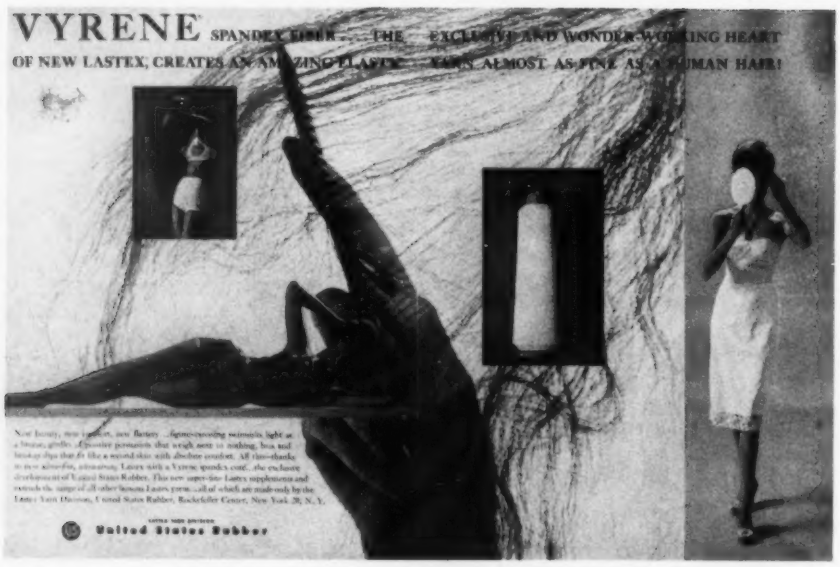
THE EMPORIUM, SAN FRANCISCO

TEXTILES FOR INDUSTRY, THE HOME AND FASHION

U.S. Rubber's industrial textiles are literally the "sinews" of industry. It produces such vital products as tires, hose, belting, filters, insulation jacketing, laundry equipment and a wide range of world-famous protective clothing.

U.S. Rubber is deeply committed to the world of textiles. In addition to the consumer fabrics whose story has been told in this report, its operations are geared to serve the textile needs of three other major markets. It produces numerous textile products for industry. Its Springset yarns for carpeting are justifiably famous. And its Lastex yarns have inspired new concepts in the world of women's fashions.

For its Springset yarn U.S. Rubber has created an exclusive spinning and finishing process which adds resilience to nylon carpeting.

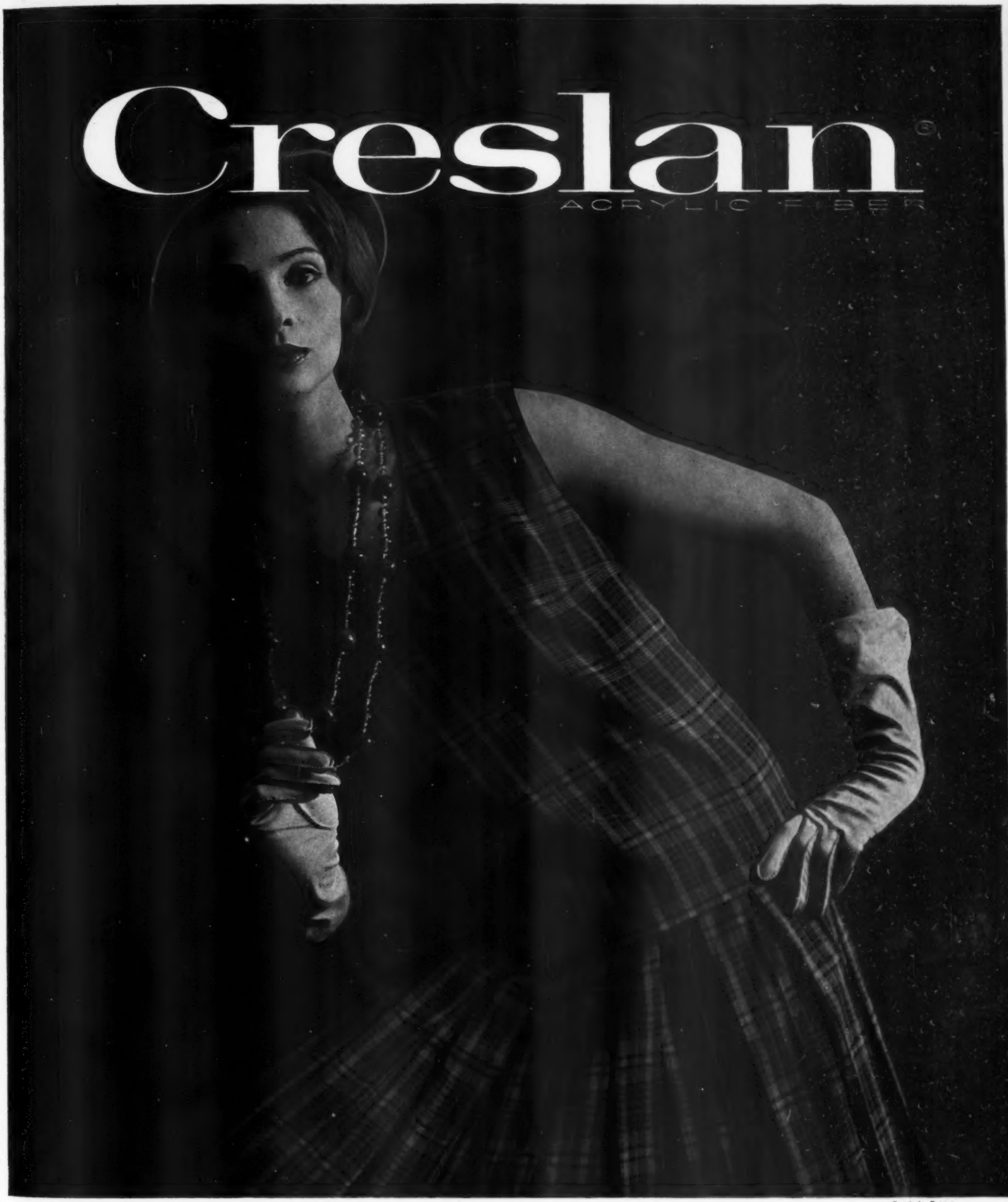
The development of Vyrene spandex fiber has added a new fashion dimension to the already impressive accomplishments achieved by the company's Lastex yarn.


VYRENE SPANDEX FIBER . . . THE EXCLUSIVE AND WONDER-WORKING HEART
OF NEW LASTEX, CREATES AN AMAZING PLASTIC . . . YARN ALMOST AS FINE AS A HUMAN HAIR!
United States Rubber

U. S. ROYAL TEXTILES
are the most recent chapter
in the long textile history
of
US RUBBER

Creslan®

ACRYLIC FIBER



Beads by Brania

THE SENSATION OF "SWING-A-LING": **MR. MORT SPORTSWEAR** swings to the tune of Swing-A-Ling, a care-free blend of 50% Creslan acrylic Fiber, 50% Coloray* rayon. Creslan keeps the pleats pleated, the silhouette in lasting shape. Enjoy its wrinkle-free, lightweight texture right now. Carry it into Fall with a shirt. Cyanamid makes the acrylic fiber; Earl-Loom makes the fabric. At Lord and Taylor, and other fine stores. American Cyanamid Company, New York.

CYANAMID

*Courtaulds Trademark

Introducing!

TRICHROMATIC PRINTING TECHNIQUE with

Cibacron®

LIVING COLOR

Dyes

NOVEL and **PREDICTABLE COLOR RESULTS** in **CREATIVE TEXTILE PRINTING**

(The background of this advertisement is a Trichromatic print with CIBACRON dyes).

With CIBACRON "Fiber-Reactive" Dyes, colors shine forth with unmatched brilliance or subtlety of shade.
Multi-color effects achieved by Trichromatic printing provide unique opportunities for the inspiration of the textile designer.

C I B A

WHERE RESEARCH IS THE TRADITION

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LIBRARY

Ghana designs—a new fashion direction

Color forecast — 1961

World-wide directory of man-made fibers

Polypropylene — the new low-cost fiber

Design splurge in at-home clothes

Color symbolism through the ages

Stripes! Stripes! Stripes
the lacy knit
the bias cut
barathea weaves
jet black
fake furs

Madras & Batiks go bright and white

Prints go primitive

AF

AMERICAN FABRICS

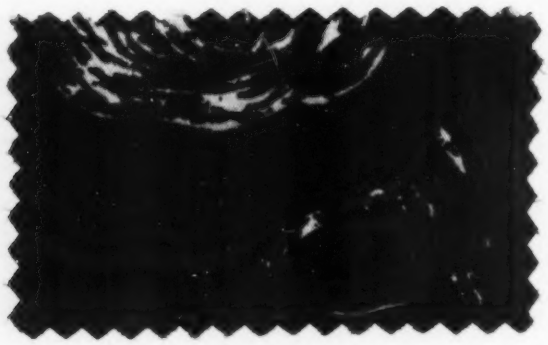
number 51 [illegible]—winter 1960

The fabric is by Renoir.

When is a picture not worth a thousand words? Right now. Because no picture can tell you how this blouse feels. For the first time, practical nylon really feels like silk. As smooth. And full-bodied. And voluptuous. The reason? A new nylon...a yarn so extraordinary, even its structure is different. That yarn is Cadon* nylon. From Chemstrand. The blouse you see here is one of the first in the world to be made of Cadon. Can you wait to get your fingers on it? At the finest stores.

CHEMSTRAND NYLON

Cadon nylon by Chemstrand



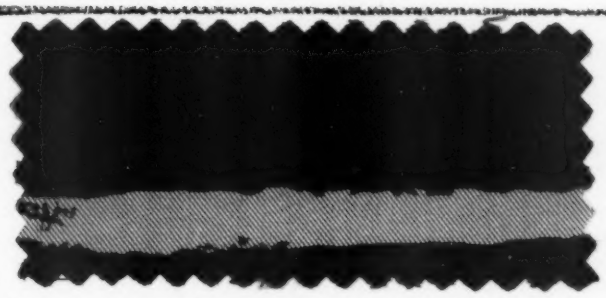
*Trademark of The Chemstrand Corporation for multilobal nylon yarn.

Chemstrand makes only the yarn; America's finest mills and manufacturers do the rest.

THE CHEMSTRAND CORPORATION, 350 Fifth Ave., N. Y. 1 • Plants: CHEMSTRAND® NYLON—Pensacola, Fla. • ACRILAN® ACRYLIC FIBER—Decatur, Ala.

DIRECTIONS

DATELINE, FALL 1960 — Covering the important fabric, fashion and color directions . . . Designed as a creative guide to fiber producer, yarn maker, mill, converter, manufacturer and retailer during the coming seasons.



All silk hand-screened stripe for blouses, dresses, ensembles.

FABRIC BY ONONDAGA

DIRECTION NUMBER 1: *Stripes and Stripes Forever*

American consumers are paradoxical. They adore and espouse change, yet they frequently maintain strong unwavering loyalties. One of these is to striped fabrics. The love of stripes may have its peaks and valleys but there is always a substantial market for stripes. The Editors of American Fabrics believe this interest in stripes will soon reach a new peak. We have reason to believe that we are approaching a period when stripes will be in the ascendancy. This is a design direction of great importance to volume fashion merchants, to manufacturers and to mills.

What gives new interest to the resurgence of stripes at this time is the fact that designers and stylists are using them not only in vertical motifs but also in horizontal and diagonal formations . . . not only in straight lines but also in broken and uneven lines . . . not only in traditional color combinations but also in wonderfully rich and unusual colors which give an added dimension and a new look to this tried and trusted theme.

A complete run-down on the stripe picture – together with actual samples, color combinations and knowledgeable fashion details – is presented to AF readers on pages 7 to 9.

DIRECTION NUMBER 2: *Jet Black Takes on New Fashion Importance*

During the past few seasons black has played only a minor role in the fashion picture. Now it is returning to favor with great acclaim. But it will not be dead black. Blacks will come to life. Look for blacks with a metallic shine . . . for blacks which hold a deep violet undertone. Get ready to bring the word "Jet" back into your fashion vocabulary. The Paris showings reaffirm a trend which was already gathering momentum among well-dressed women all over the world. And of course, that little black cocktail dress will once again be a must in every fashion wardrobe.

DIRECTION NUMBER 3: *Rebirth of the Barathea Weave*

About thirty years ago barathea was a household word in the American home. Your grandfather probably wore Kaiser's barathea cravats – they were one of the few nationally advertised men's products of the period. And your grandmother very likely owned a silk barathea dress. It was the vogue.

During the intervening years barathea faded out of the picture but now this classic weave is on the verge of a major revival. Undoubtedly it will be barathea with a difference as our modern designers give new interest to an old favorite. Designers of slacks, shorts and other sportswear garments would do well to check their resources and see what is being done on the barathea front. The editors of American Fabrics consider the barathea weave a most important revival for the fashion industry and we tell its story in more detail on page 11.

WATCH FOR Greek influence on design with promotional help from increased travel to Greece and the Greek Islands.

DIRECTION NUMBER 4: *Fur Trims Influence Fabric Colors*

The popularity of lavish fur-trimmed coats and suits, heralded more than a year ago, is crescendoing to new heights. Fabric colors must necessarily be influenced by the colors of these fur trims. This is not a case of the tail wagging the dog. It is a question of developing fashion colors which blend well with the fur shades. For this reason you can count on a continuing acceptance of beiges, browns, taupes and camel for the Fall and Winter seasons to come.

A 20 momme pure silk white brocade exclusive with D. Fried & Sons.

FABRIC BY KANEBO

DIRECTION NUMBER 5: *White Silk Brocades — A Rising Favorite*

Silk brocades have been steadily rising in favor and they give every indication of reaching new heights in the coming seasons. The double luxury appeal of silk-plus-brocade is irresistible when the styling and coloring are done with control and sophistication as are the newest versions of this trend in off-white or very pale tone-on-tone shadings. Their use in the luxury market is very varied and includes cocktail suits, evening gowns, fur coat linings, evening bags, shoes and other accessories.

DIRECTION NUMBER 6 — *A Strong Fashion Trend to the Bold Designs of Ancient and Primitive Cultures*

AFRICAN DESIGN

The Kente cloth robe worn by Ghana Prime Minister Nkrumah *(left)* themes a whole new direction for both fabric and fashion design and heralds an awakening interest in the design motifs of the newly emerging African nations. A full report on the exciting textiles of Ghana appears in this issue of American Fabrics. It offers our own fabric-fashion industries a fresh and as yet untapped source of inspiration which we predict will develop into an important trend.

"PUCCI" PRINTS

In 1958, bold patterned silk shirts by the designer Pucci (*right*) set a new trend in the Riviera, Florida and Caribbean resort areas. The No. 46 issue of AF showed these designs and hailed them as an important fashion direction. The effect of this brilliant Pucci styling is now beginning to broaden out into an exciting group of conversation-piece prints which will soon move into the volume field. We believe it is a logical contender for the next big direction in prints.

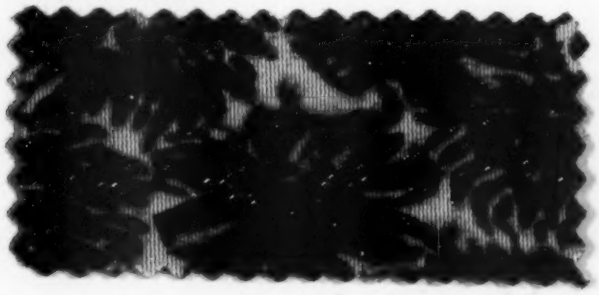
THE ISLAND INFLUENCE

Another facet of the bold direction which high fashion prints are beginning to take is seen in the accompanying photographs. These candid shots were taken recently at some of the leading Southern resorts. They reveal a radical departure from the conservative styling which has been dominant for the past few seasons. The island influence has been with us before and has taken some pretty extravagant turns which eventually killed it as a fashion influence. However, the present versions have a degree of sophistication which was never achieved by their predecessors and it would be well to keep this in mind when adapting such designs.

ORIENTAL THEMES

Still another developing influence in the print picture is the use of a single figure, carefully placed on a solid ground. This design approach is drawn from oriental themes and when handled with finesse, it achieves a boldly dramatic effect. The photograph at the right, which illustrates this approach, was taken recently at Montego Bay. The design motif on the left comes from an oriental stone rubbing and suggests the type of figure which lends itself admirably to such engineered prints. The beauty of these designs depends on the extravagant use of open grounds and can easily be ruined if overdone or cluttered with too much design.

DIRECTION NUMBER 7: *New Opportunities for Knitted Fabrics*



A floral print matte jersey of acetate and rayon bonded to Scottfoam. Cloth is designed for rainwear, sportswear, coats and suits.

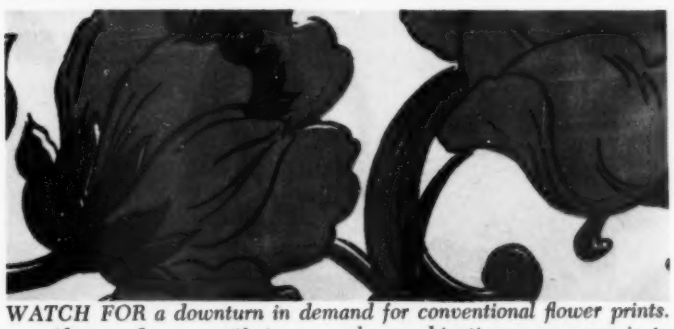
FABRIC BY ABACO

The importance of knits has been emphasized over and over again. From the small tricot knit to the big bulky sweater stitch, knit goods have increased in popularity in all fields and in all parts of the world.

Knits are now being used as trims for fur jackets. This has taken the form of knitted sleeves which is a novel idea with great possibilities when one considers the vast field for simulated fur garments which are still in their infancy. The popularity of knits in the men's and boys' fields is not diminishing nor is there any limit to the fashion ideas for which knits can be used. Silk knits for women are growing more and more fashionable and the whole picture, of course, is considerably helped by the packability of knits for the traveler. Jersey prints are now past the experimental stage and both the French and the Italians have overcome many of the production difficulties. As long as the knitwear field continues to produce imaginative colors and styles, it can be assured an expanding market.

DIRECTION NUMBER 8: *The Romantic Look in Cottons*

Periodically fashion interest in femininity comes to the fore. Parallel with the emergence of the slinky, sophisticated look we see a renewed interest in the romantic look . . . especially effective in cotton fabric styling. The Swiss have always been masters in handling the romantic look in cottons. Now this influence has extended to a number of American designers and the result will undoubtedly be a greater emphasis on this theme in many pacesetting lines during the coming seasons.



WATCH FOR a downturn in demand for conventional flower prints. . . . Abstract flower motifs in new color combinations may move in to fill the vacuum. . . . Art Nouveau influence must be reckoned with. An example is the accompanying photograph of a silk print by Stehli.

DIRECTION NUMBER 9: *Ribbon Stripes for Romantic Interest*

In keeping with the romantic trend in fashion, fabrics embodying the ribbon stripe treatment hold a great deal of interest. Many of the designs for these fabrics stem from French and Swiss ribbons used for millinery and accessories. They are especially adaptable to cottons and to silks. They also lend themselves to interesting color coordination with solid shades of either the predominating ground or the decorative stripes. The extra dimensional appearance and the sentimental flavor of these fabrics offers a fascinating medium for the fashion designer.

DIRECTION NUMBER 10: *At-Home Clothes for the Sophisticated Market*

Silk at home gowns by Luis Estevez *(left)* and Paul Whitney *(right)*.

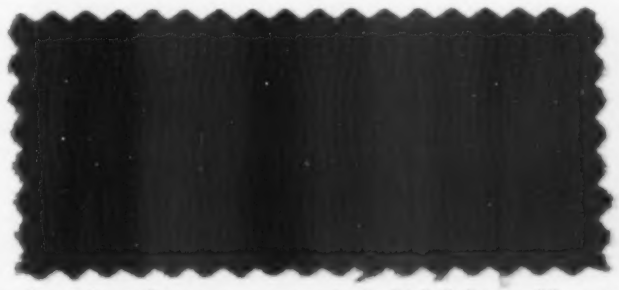
Now that science and mechanical wizardry have turned some of our modern homes into magic fairylands, the mistress of the house has begun to lavish some special attention on herself. The result is a growing interest in sophisticated at-home clothes and a greater emphasis on this type of costume in the lines of some of our leading designers. Imagination, ingenuity, fun and convenience characterize many of the at-home clothes now on the market. The designers, of course, love to play with this approach. For them the sky is the limit and everybody has a lot of fun. Fabrics can be fantastic but comfortable, in keeping with the end use to which they will be put. For an illustrated report on this growing trend and some of the designers who cater to it, see the story on at-home clothes elsewhere in this issue.

DIRECTION NUMBER 11: *Color and Pattern Coordination*

After years of struggle to overcome the industry's inertia and indifference, coordination in color and design has finally achieved a major breakthrough. Time was when a sweater manufacturer was hard put to find and convince a skirt manufacturer to coordinate the colors of their two products. Even the handbag and shoe manufacturers had difficulty in arriving at agreement about color coordination. But imperceptibly the trend towards color and pattern coordination has grown and developed into a major fashion influence. Consumers can finally buy their ensembles in coordinated colors. Manufacturers, mills and retailers have finally realized the fashion importance and the sales value of coordinated colors and all are riding the bandwagon. No longer a theory, no longer a gimmick indulged in by starry-eyed stylists, color and pattern coordination is here in depth.

DIRECTION NUMBER 12: *Mustard adds Spice to Clothes*

For the college market especially, the color tones of mustard, mustard gold and mustard green are becoming strong favorites. We see them in sweaters, shorts and slacks and the extension of this color family to other garments will be inevitable. Once a fashion color takes hold on the campus, it does not easily disappear. Mustard tones should be good for a long time to come. Question for the fashion industry: When will this fashion color be taken up boldly for a wider market?



A sculptured matelasse crepon cotton in the high fashion gold mustard color. Designed for men's outerwear and slacks.

FABRIC BY REEVES BROS.

FABRIC BY STEVENS

DIRECTION NUMBER 13: *A New Dimension in Textured Crepe Fabrics*

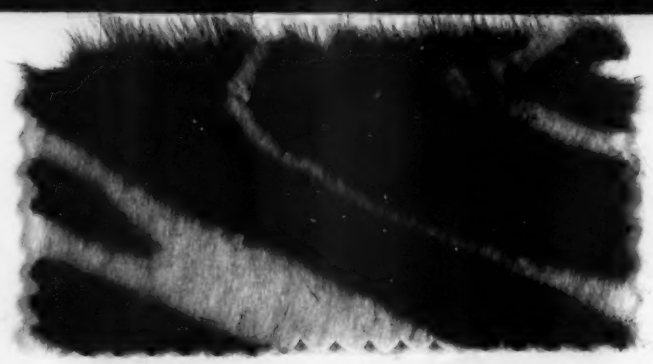
The interest in textured crepe fabrics has been developing strongly during the past year and has been noted in several previous issues of AF. The cloth swatched here adds still a new dimension to the growing trend. It is called *Doucelle* and was developed by Stevens from textured 100% Dacron yarn. It has been specifically designed for lingerie and related apparel and is being launched in the Yolande line. The new fabric has all the virtues of Dacron with a luxury hand which closely approximates silk crepe. Its texture is permanent and derives not from a fabric finish but from the nature of the textured Dacron yarn and the woven construction. It is completely washable and crease-resistant, has excellent opacity and provides fullness without weight. It represents a development which considerably expands the fashion uses of polyester fiber.

The bias cut in a "little black dress" of Enka rayon matte jersey *(left)* and a full bias cut plaid in a dress by Donald Brooks.

DIRECTION NUMBER 14: *Revival of the Bias Cut Popular in the Thirties*

The recent Paris Fall showings reaffirm the importance of the bias cut which was in vogue during the 1930's. This is now a dominant direction for the coming seasons. You will recall that in the 30's fabrics were cut to fall into natural folds without benefit of linings or stiffenings. The use of bias-cut cloths was a logical result of this trend and is being revived today with a great deal of flair.

Designers in search of fabrics adaptable to this bias cut trend, will turn to soft supple crepes and jerseys, to georgettes, warp prints and to fluid fabrics generally. Suppleness and drapability are the two most sought after qualities. Hand in hand with the bias cut goes a trend to greater sophistication in clothes, designs which are sexy rather than simple and naive. "Make it slinky and make it sexy" may well be the watchwords of a large segment of next year's collections.



Zebra stripe fake fur is blend of 75% Dynel with 25% Verel.

FABRIC BY PRINCETON MILLS

DIRECTION NUMBER 15: *Fake Fur On The Prowl*

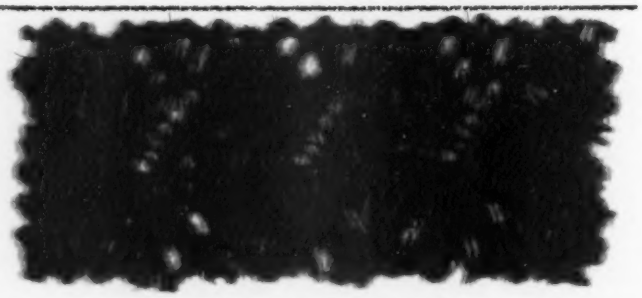
The era we live in produces so many technical marvels that we often take them for granted. A case in point is the ingenious development and rapid rise of the fake furs. Here science and industry have combined to produce amazingly accurate and amusing facsimiles of the most expensive furs at prices almost any one can afford.

Past issues of American Fabrics have stressed the importance of this trend which, in our opinion, is due for much greater expansion. The extraordinary ability of our mills to produce imitation fur fabrics which approximate the mood and texture of genuine pelts is an impressive example of textile ingenuity which will undoubtedly find new fashion areas and themes to explore.

Interestingly enough, the high fashion aspect of the real fur business has not been hurt at all by the frankly imitative fake furs. For example, never has the demand for the high-priced Somali leopard been so great as it is now. The demand exceeds the supply and there is a waiting list for these high priced coats in spite of the fact that fake leopard furs are also extremely popular and are seen everywhere at volume prices.

From the industry's point of view, one of the important aspects of the fake fur business is the rapidity of turnover as compared with real furs. There is a growing segment of our population which wants fashion items which do not have to be kept forever. Buying new clothes is fun, especially when they can be replaced without too much hurt to the pocketbook. A woman can buy a fake fur coat, wear it a season or two and be ready for a new one without waiting a decade. The old concept of "investing" in a fur coat and "getting your money's worth" seems to be going the way of many other traditions.

Considering all these factors, we feel very bullish about fake furs. It now remains for the technicians and stylists to work effectively together in the production of exciting and intriguing fake fur fashions. The opportunity is there and not only in the apparel field but also in the home furnishings field as well.



A fleur de lis rochelle lace knit of 100% Creslan acrylic fiber.

FABRIC BY SUCCESSFUL CREATIONS

DIRECTION NUMBER 16: *A New Face to Knits — The Lacy Knit*

The virtues of the ubiquitous knit have been sung elsewhere in these directional pages and now we raise our voice in a paean of praise to a new twist in the field of knits – the lacy knit. The lacy knit gives a refreshingly new face to knitted garments like pants, coats, evening dresses – in fact to any kind of knitted wear. It is strikingly apparent that new avenues of styling can open up with lacy knits. Imagine at-home evening pants of lacy knit over a satin lining or coats and suits which combine lacy knits with ribbed or leather trims. And now, with the growing renaissance of lace, evening dresses made of lacy knits will also be favored. Note the luminescent silky glow of the swatch shown. It is derived, not from a fabric finish, but from the nature of the yarn itself.

JUST AS PLAIDS HAVE THEIR ROOTS in history, so too stripes have come down through the centuries as a basic, organic, decorative motif. Stripes have been used as tattoo motifs by primitive peoples, as heraldic flags and banners, as regimental, school, club, military and naval insignia. They have international acceptance and they speak a fashion language which knows no barriers. Most of all, they offer flattering and decorative possibilities for every branch of the textile industry. On these pages we present a number of current stripe treatments which indicate the directions of the current trend and its volume potential during the coming seasons.

DIRECTION NUMBER 17:

STRIPES ARE HOT

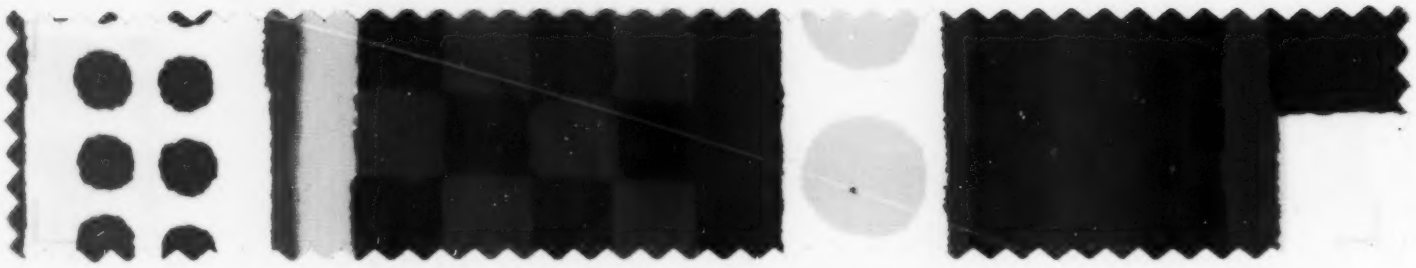
Verticals, Horizontals, Diagonals . . . all will be popular

THE CURRENT RESURGENCE OF STRIPED FABRICS WAS FORECAST IN THE NUMBER 48 ISSUE OF AMERICAN FABRICS ALMOST A YEAR AGO. SINCE THAT TIME THE TREND HAS taken on new strength as predicted, and has appeared in many new forms. It now shows every indication of developing into a fashion boom which will challenge the creative ingenuity of every textile and fashion designer in the business.

Like other classic design themes, stripes have had – and will continue to have – their ups and downs. While they consistently represent a substantial volume in the textile market, they are subject to the same vagaries as any other fashion. But for the moment and for this period directly ahead, the tides of fashion are causing a swelling demand for stripes of all kinds.

There are several important factors contributing to this trend both in home furnishings and in apparel.

The most significant of these is color. If there is any single element which dominates the current fabric-fashion scene, it is *color* and in no other design area does the ability to handle color fastidiously and tastefully show to greater advantage than in



Jockey stripe print inspired by the bold designs of racing shirts.

FABRIC BY CONCORD TEXTILE

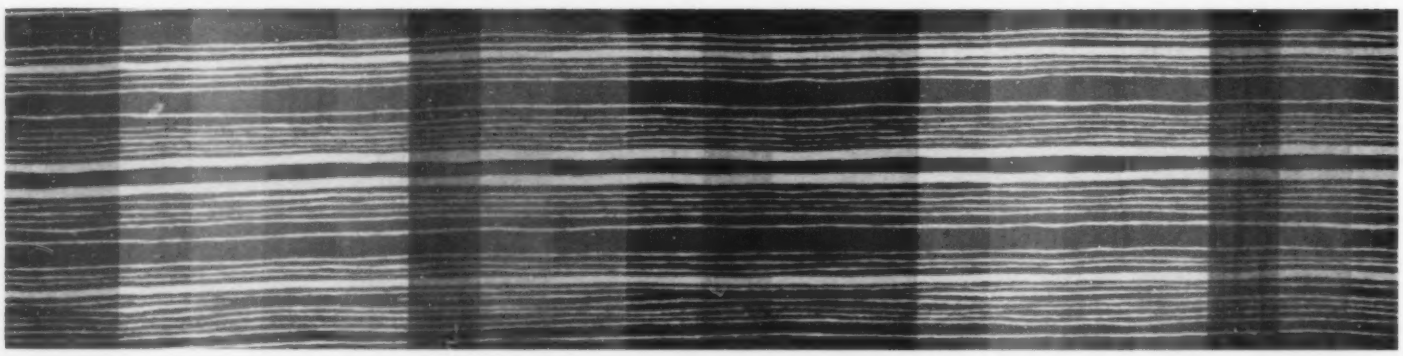
DIRECTION NUMBER 17: *(continued)*

stripes. The juxtaposition of colors places a premium on a designer's color sense and today (with color timidity fading) the possibilities are greater than ever before. The new, different and unorthodox color combinations pioneered by colorists give new fillip to the contemporary stripe fashion picture. A whole new color world has opened up before us, often inspired by the traditional colors of foreign cultures such as India, Siam, and other countries in Asia and the Far East.

Another factor contributing to the current interest, is the unorthodox way cutters and designers are using stripes today. Instead of the traditional verticals, we see stripes used both horizontally and diagonally. For example, in the high fashion segment of the fur field, designers are for the first time cutting pelts of sable, mink and chinchilla in horizontal stripes.

The handling of stripes has also taken on a new dimension in the direction of a freer and looser print treatment – very much like the early avante garde stripes produced by the pioneer colorists as long as a decade ago. Other designers have now begun to see the interest which can be achieved with hand-brushed stripes and carefully casual lines which overlap and blend with one another. Such stripings develop a charm which lends itself admirably to the print technique.

These are some of the influences on the current resurgence of stripes. They add up to a flattering perennial fashion surging into a high tide of acceptance, aided by better understanding of color and greater variety in treatment.

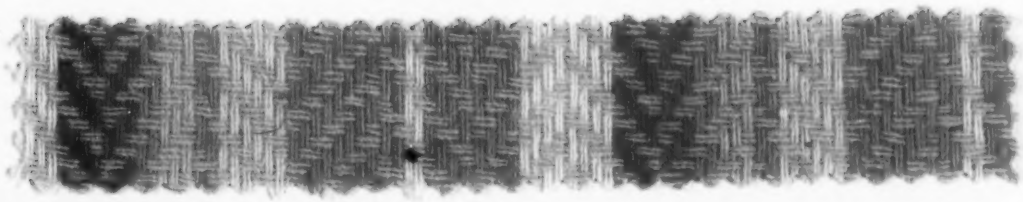


A two-way multi-color printed cotton stripe designed by Tillett.

FABRIC BY BELLE

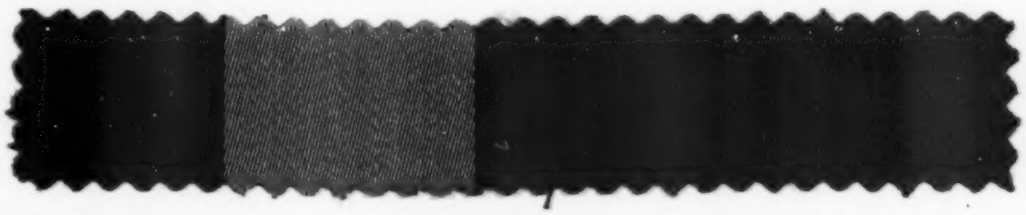
A MACHINE FOR PRINTING STRIPES

The new fashion interest in stripes focuses attention on the invention of George Tillett for printing vertical stripes which run with the warp of the goods. Until Mr. Tillett developed this machine in 1941 it was not possible to print a warp stripe by the screen technique because there was no way of joining the stripe without getting an ugly break where the screens joined. It was of course possible to print a warp stripe by the roller method but flexibility of design and color experimentation was thus far more limited. With George Tillett's stripe printer, his sons Leslie and Jim began their experimentations which combined stripes with overprintings and created a whole new feeling in prints. By 1945, George Tillett further perfected his striping machine until it was capable of producing 1500 yards in an 8-hour run. It is now licensed to six printers, including Leslie Tillett's own firm, Belle Fabrics.



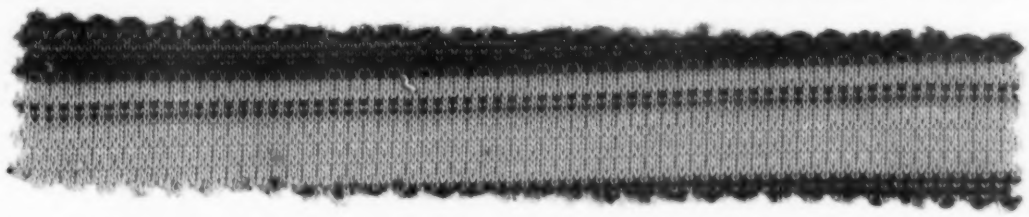
Jane Bayard's reverse twill wool stripe in the Scandinavian genre.

FABRIC BY YALE WOOLEN MILLS



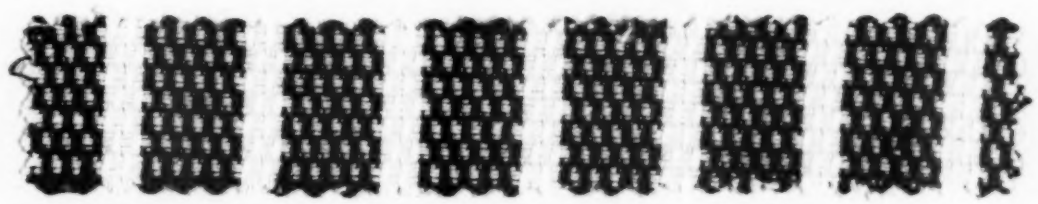
Gypsy colors in a 100% cotton stripe designed for sportswear market.

FABRIC BY GALEY & LORD



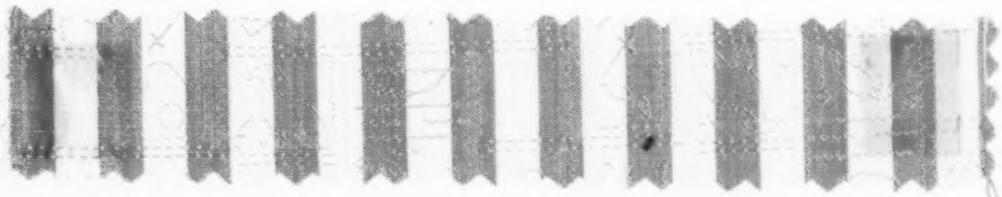
Filling stripe in all cotton has been knitted with a cord stitch.

FABRIC BY ALAMAC



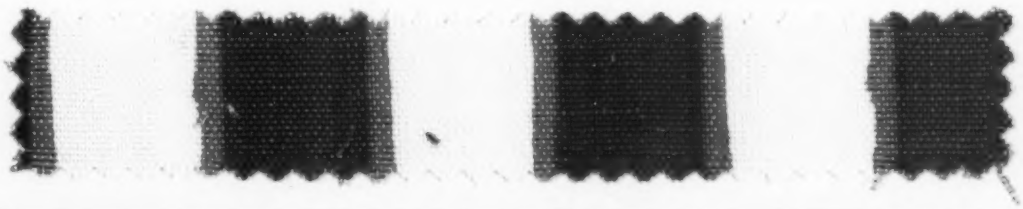
Black and white basket weave cotton stripe for women's apparel.

FABRIC BY HERBERT MEYER



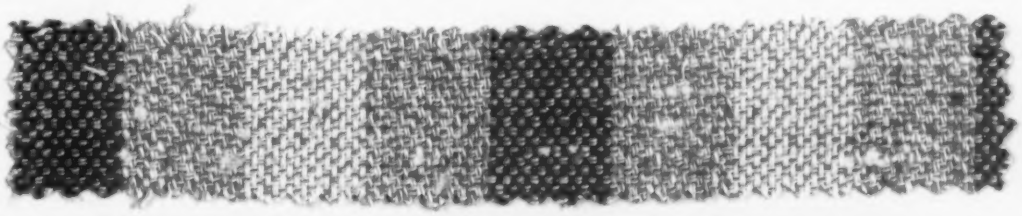
All silk jacquard stripe with design motifs on Egyptian theme.

FABRIC BY AUBURN



All cotton duck with random striping for the better sportswear field.

FABRIC BY M. LOWENSTEIN & SONS



Surface textured cotton and rayon stripe for jackets and slacks.

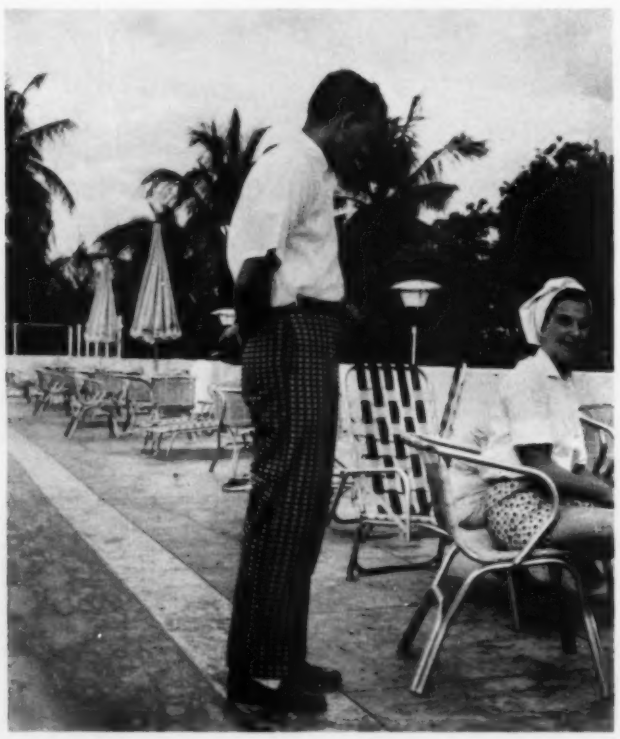
FABRIC BY COHAMA

A silk and cotton blend in deeptone narrow stripes for sportswear.

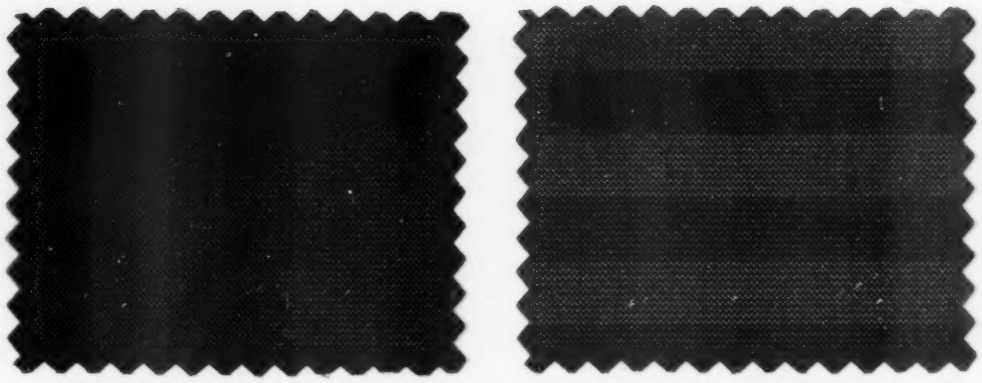
FABRIC BY M & W THOMAS

DIRECTION NUMBER 18: ***Bright Madras Gives a Fresh Look to an Old Favorite***

To those who have already counted out India Madras as a fashion has-been, we say: "Look again!" This spectacular favorite is far from dead. On the contrary, it has been reborn with a new look. Instead of the dark and sometimes murky tones which have been so popular, we are now beginning to see *Bright Madras.* The effect is largely achieved with white grounds and strong accents of white dominating the patterning. If you take the old, dark-toned madras and place it against a piece of bright madras the difference is immediately obvious. It offers a clean, fresh, sharply etched look which is admirably suited to both the women's and men's sportswear field. The accompanying photographs were taken recently at leading fashion resorts. They clearly document the trend and indicate the strong future potential of bright madras.



The Directional pages of American Fabrics appear in each issue. Their aim is to provide precise and definitive reports on those fabrics and fashion directions which mean profit to the textile and allied industries. These reports are factual and to the point. They are authenticated and made useful to the reader through actual fabric swatches and precisely printed colors.



Two color-coordinated examples of the barathea-type weave in a silk and acetate blend.

FABRICS BY STEHLI SILKS

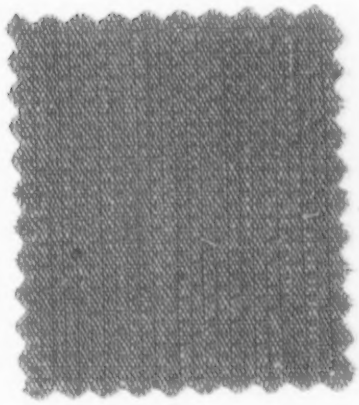
DIRECTION NUMBER 19: *Barathea: Revival of an Old Classic*

BARATHEA IS A PLAIN TWILL OR FANCY WEAVE FABRIC OF ENGLISH ORIGIN ONCE VERY POPULAR FOR MEN'S NECKWEAR AND WOMEN'S DRESSES. IT WAS TRADITIONALLY MADE with a silk or rayon warp and wool filling. (Today it is frequently made with a rayon warp and cotton filling.) It was always highly valued for its fine texture and its granulated pebble surface. Barathea was traditionally dyed black and was considered a "dress-up" fabric.

Timing is always a vital factor in the success of a fabric-fashion and American Fabrics believes the time is ripe for a strong revival of this forgotten classic. Barathea offers the industry an important variation on the ever-basic twill weave and an opportunity to capitalize on public acceptance of twills. It has the advantage of being remembered as a great favorite two generations ago for both women's dresses and quality neckwear for men. Its conservative and modest nature lends itself to a fresh look and to new uses in many areas where a too-pronounced and dominant face would be obtrusive and out of place.

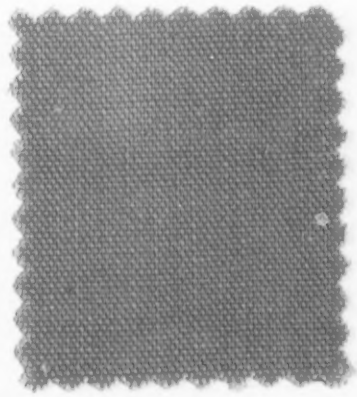
For those segments of the fashion industry which need to supplement the popular chino, twill, sharkskin and poplin weaves with a new texture—barathea offers a new field of fashion inspiration. Like most twills, it is a simple, rugged and basic weave. It has the additional advantage of a soft textured surface and a very pleasant hand. In high fashion circles it is beginning to find ready acceptance as a fabric for slacks and shorts. There is every reason to believe this acceptance can be extended both in depth and variety of usage.

From the very elegant and very expensive silk barathea dresses for women and dinner jackets for men, to cotton barathea slacks and sportswear, a whole range of barathea weaves awaits the stylists. A few trend-setting examples are shown here.



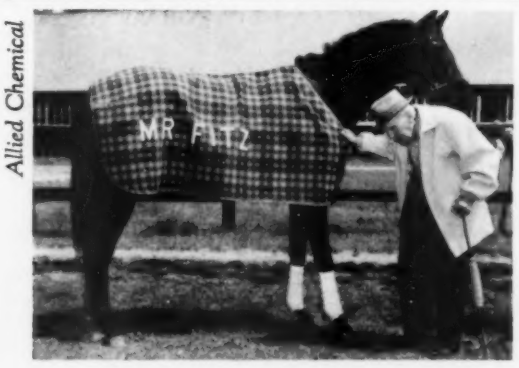
An all-cotton barathea weave for sportswear and home furnishings.

FABRIC BY AVONDALE



Barathea weave gives new surface interest to all-cotton cloth.

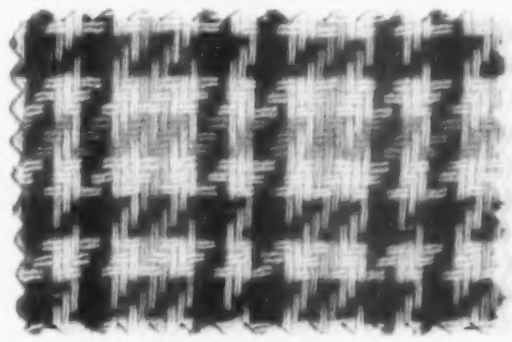
FABRIC BY CONE MILLS



THE COUNTRY LOOK

DIRECTION NUMBER 20: *The Sporting Look in Fabric and Fashion*

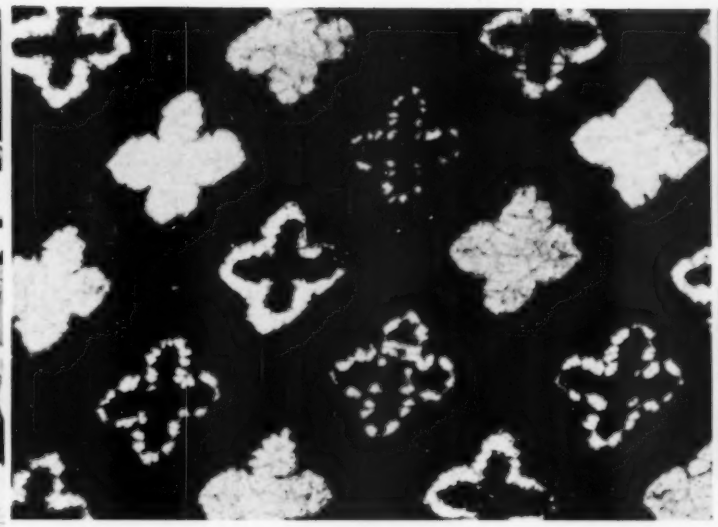
Think of the horsey set and their fashion authority. Then watch the trend to oversize district checks and plaids . . . to variations on the hounds'tooth check . . . to culottes and knickers for campus and country wear . . . to a revival of colorful reversible coats.



FABRIC BY DEERING MILLIKEN

DIRECTION NUMBER 21: *White Wools with Bright Color Notes*

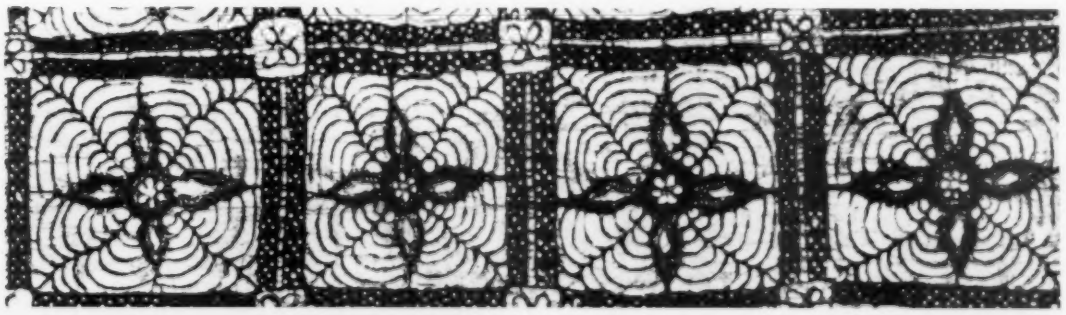
The fabric swatched here illustrates a further extension of the white look which is taking hold in many fashion areas. Here it is shown in a wool sportswear fabric which takes on a new dimension through the use of highlight color notes against white grounds.

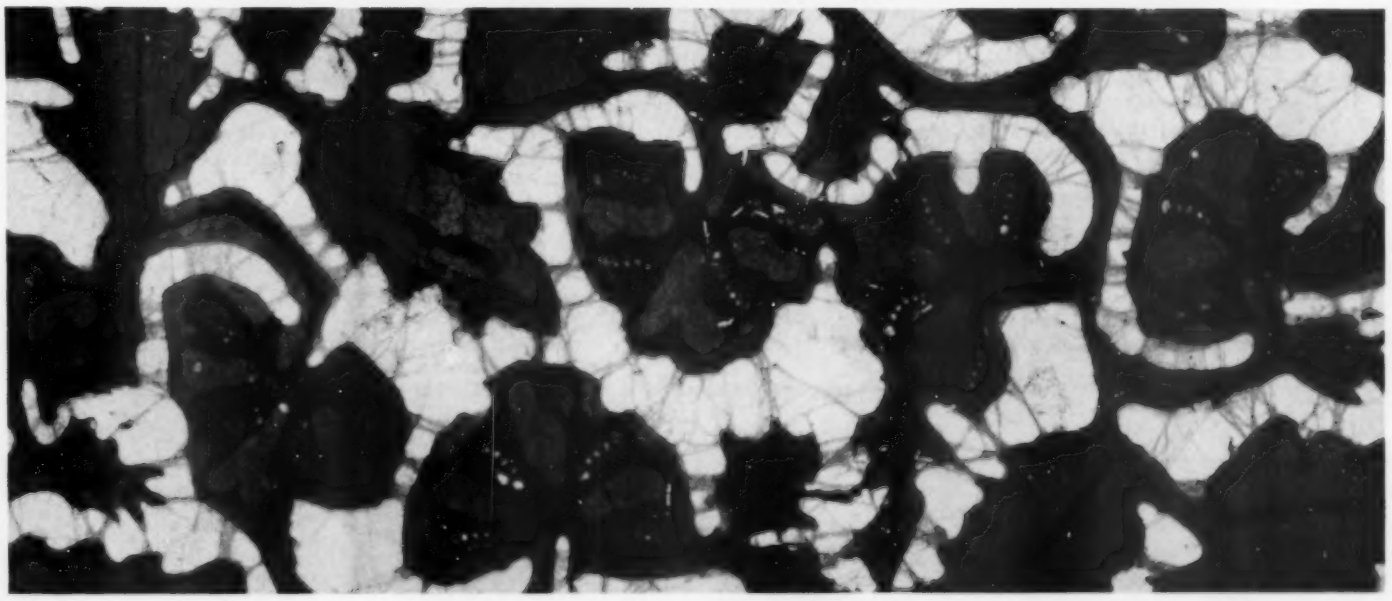


DIRECTION NUMBER 22: ***Batiks in New Colorings;***

Batiks Shot with WHITE

The interest in batik prints continues to gather momentum. Textile designers have learned to refine and enlarge the scope of their early efforts and the result is that more and more beautiful versions of this popular print trend are beginning to appear on the market. These new versions of the traditional Indonesian and Javanese batiks have a more contemporary color flavor. The introduction of white grounds and small vivid shots of color has given these batik interpretations a greater popular appeal. At the same time, refinements of the traditional browns and blues continue to enjoy a devoted, though more limited, following. Batiks will be in the fashion spotlight as long as textile designers continue to approach this rich design source with creativity and integrity.





AMERICAN FABRICS NO. 51

FALL-WINTER 1960

CONTENTS

COVER DESIGN

W. Lully's free adaptation of an Adinkira cloth from Ghana brings out the rich potential of an exciting new design source which has much to offer the U.S. fashion industry.

MAN-MADE FIBER DIRECTORY

An up-to-date world-wide directory of man-made fiber brand names which reveals the vast and continuing growth of the scientific fibers. The listing covers all U.S. brands by types, together with their producers. It also lists the major foreign producers and their brand names. INSERT

FABRIC AND FASHION DIRECTIONS 3

Themes for the coming seasons of fabric and fashion . . . Resurgence of stripes in unique forms and colorings . . . Revival of Barathea . . . Bright Madras . . . Batik with white . . . The big print and the primitive motif . . . The lacy knit . . . The bias cut . . . Jet black . . . White silk brocade . . . The country look . . . Swatches and photographs to illustrate important themes and ideas for future promotion.

Page 46

THE TEXTILES OF GHANA 51

An exclusive AF presentation of a new fabric-fashion theme offering a fresh, untapped source of inspiration to weavers, knitters, textile printers and fashion designers. An 11-page photographic essay on the Ashanti weavings known as Kente cloth and the sophisticated Adinkira prints produced and worn by the natives of Ghana.

AT-HOME CLOTHES 62

A report on the expanding field of at-home clothes for a sophisticated market and the fabric thinking of important fashion designers who labor in these increasingly fruitful vineyards. Illustrated with the work of Tina Leser, Sylvan Rich, Jack Lenor Larsen, Anne Fogarty and Branell.

THE SYMBOLIC WORLD OF COLOR 67

The fascinating symbolism of color, its uses in modern psychotherapy, its multifold meanings in ancient mythology and religion, offer rich material to the textile stylist, the colorist and the fashion designer in search of new color themes and fresh approaches to color promotion. An 8-page feature article by the famous author René Fueloep-Miller. Illustrated with colorplate tip-ons.

THE V'SOSKE RUGMAKERS 83

The illustrated story of a unique textile enterprise which is at once designer, craftsman and production manufacturer, controlling all the processes of rugmaking from wool spinning to the finished product.

STUDENT DESIGN WORK 87

Illustrating the forms and approaches taught to students in our modern art schools — in this case Cooper Union. The closeness to basic principles gives these classroom efforts an untrammelled look which can well be an inspiration to textile stylists in search of new design directions.

SPLENDID OPPORTUNITY FOR SILK 90

A thoughtful analysis of the growing need to project for the American consumer a stronger image of silk.

NEW USE FOR A BASIC FIBER 106

Report on a new high tenacity rayon cord developed by American Viscose as a strapping material with many advantages over other materials now in use.

MARKETING PRESENTATIONS

COOSA COLORS FOR FALL 1961

Coosa turns to the rich shades of nature for a specially selected range of Fall 1961 fashion colors prepared in conjunction with the American Fabrics Color Council.

THE CELANESE FAMILY OF FIBERS

An 8-page marketing report on the multi-fiber concept as developed at Celanese. The entrance of chemistry into the textile field has made it possible to research and develop a fiber for a particular end use. At Celanese this concept has resulted in a well-balanced and versatile family of fibers, each designed to perform a particular function in the world of today.

THE STORY OF FABULASTIC

How a modern concept of flexibility and fit, answering the modern woman's demand for comfort and control, has resulted in the creation of a unique textile organization.

NEW FASHION VISTAS IN YARNS

An AF marketing report on the custom blended yarn program at Collins & Aikman. Long experience in making special yarns for its own specialized fabrics has given C & A the ability to offer outstanding service and creative experimentation to its satisfied clients.

MERAKLON POLYPROPYLENE — NEW LOW COST FIBER

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batik-striped dress by Toni Todd in an Otra print Cotron fabric by Lowenstein

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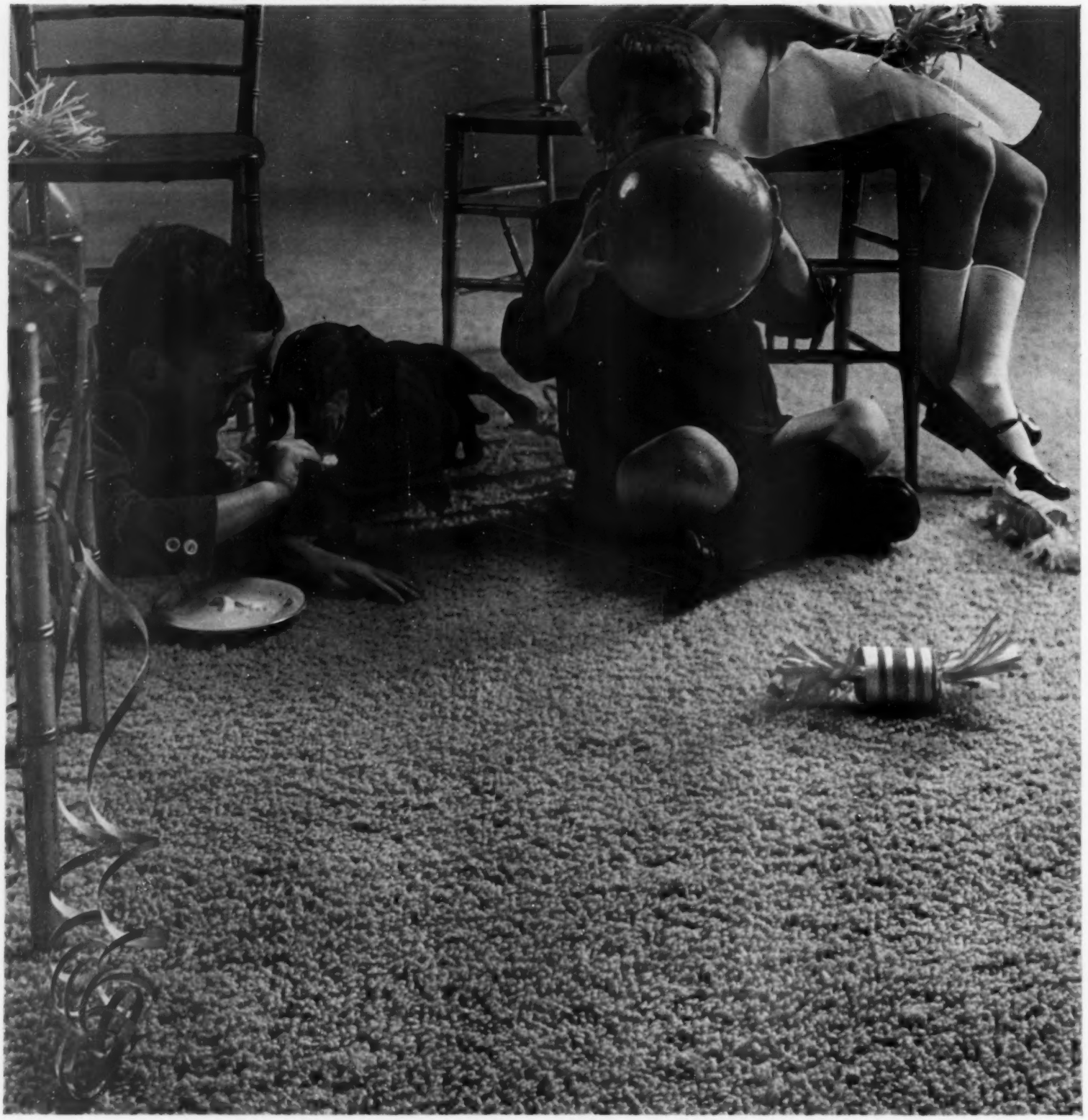

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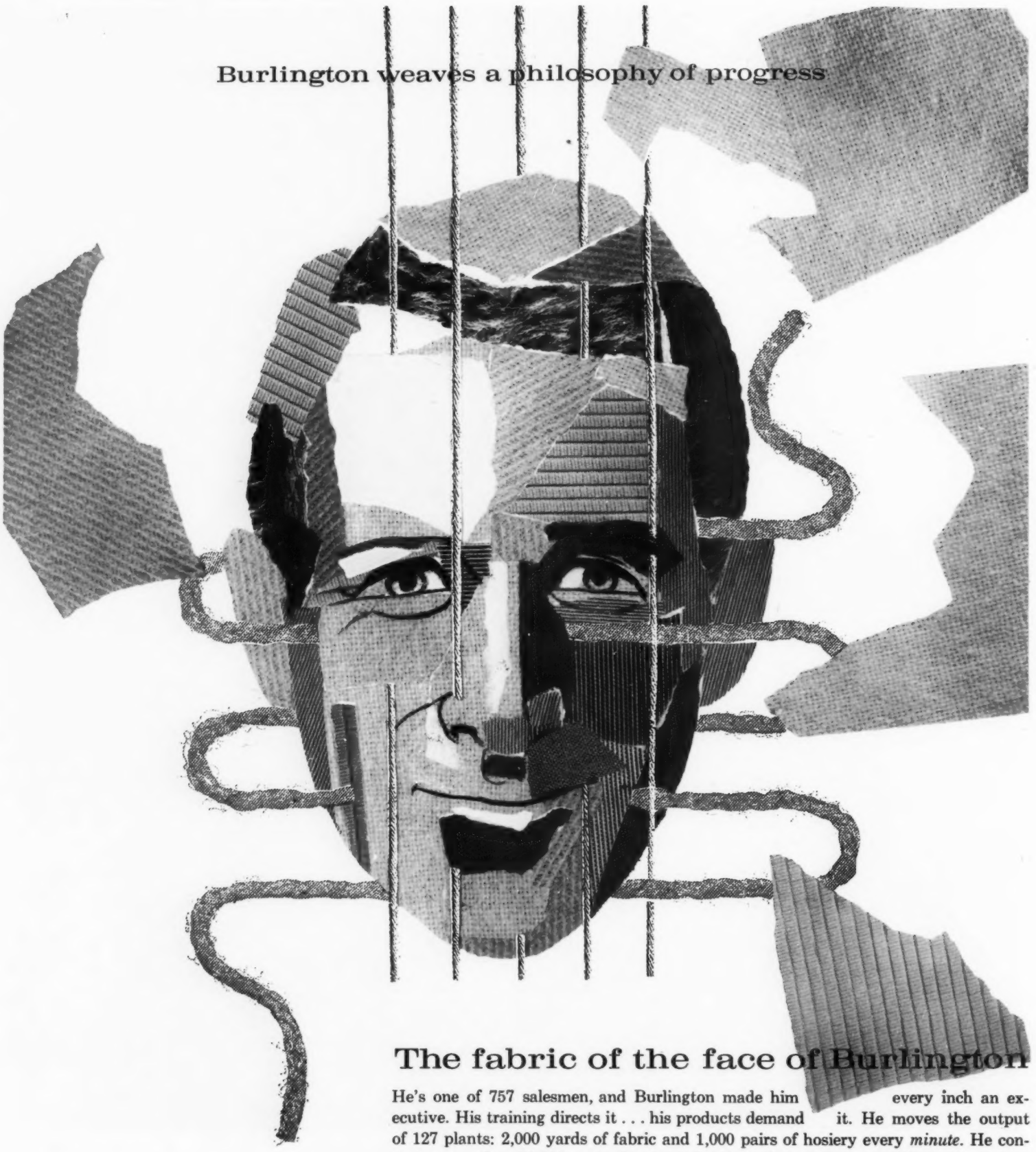

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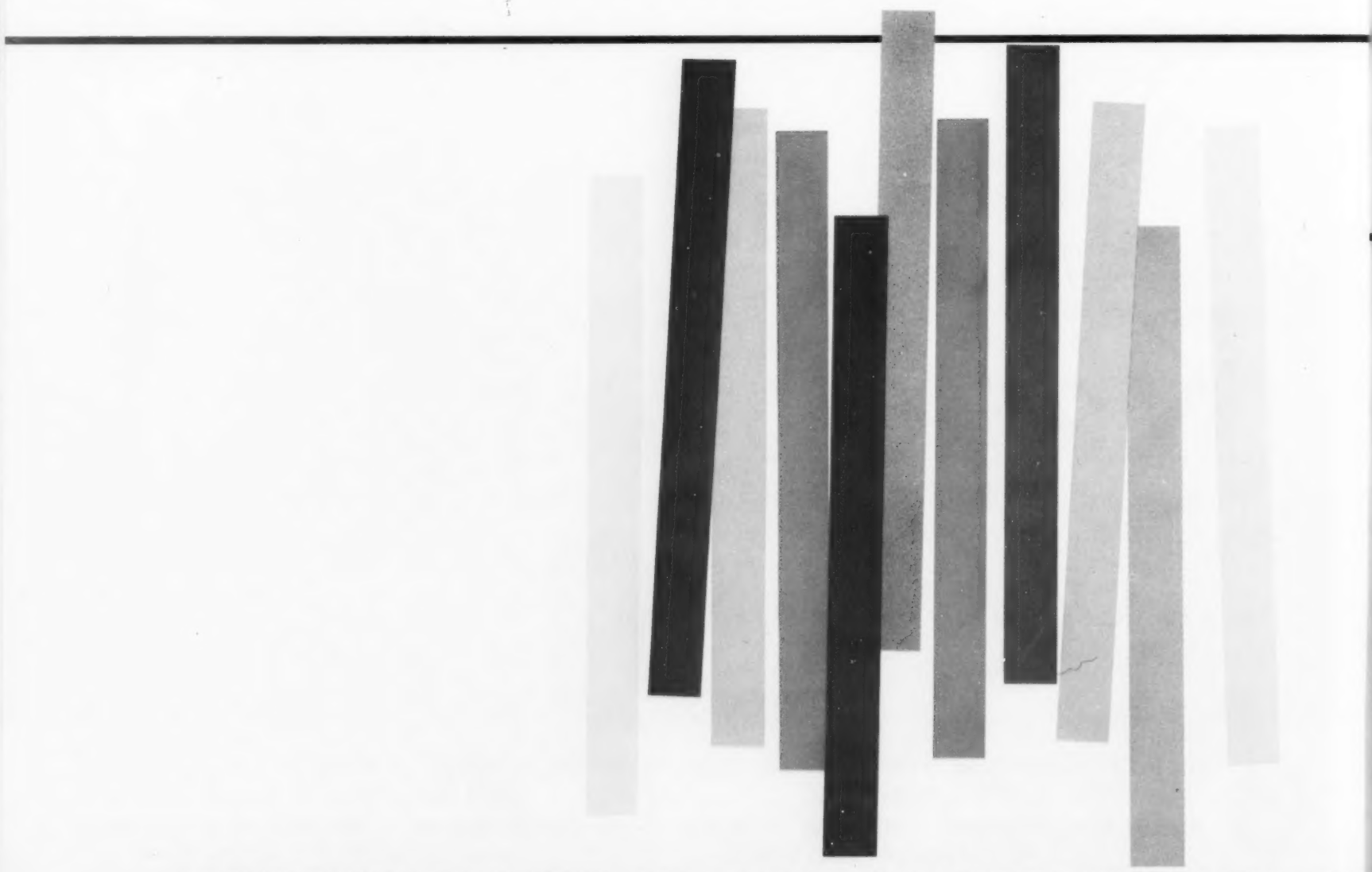
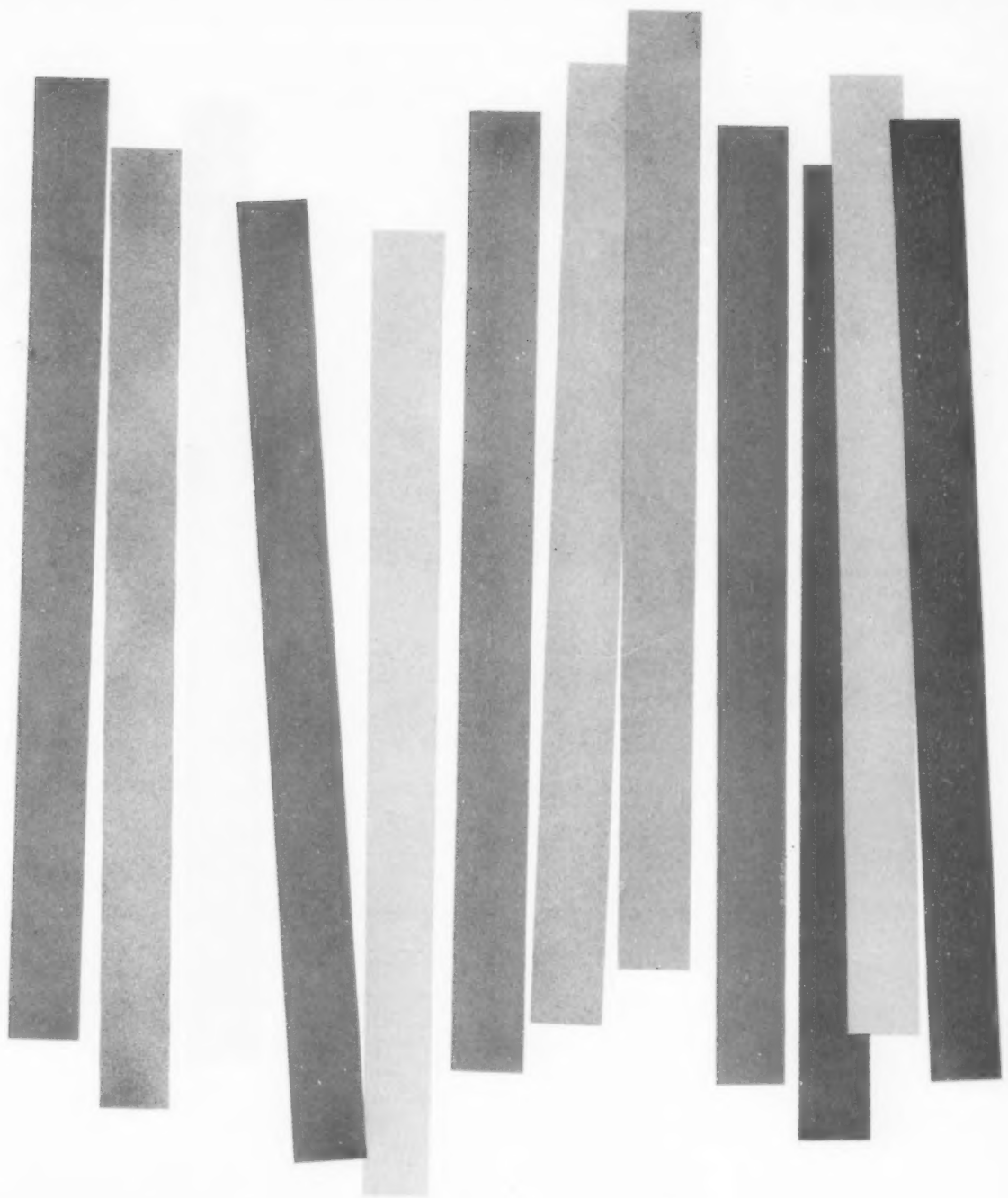
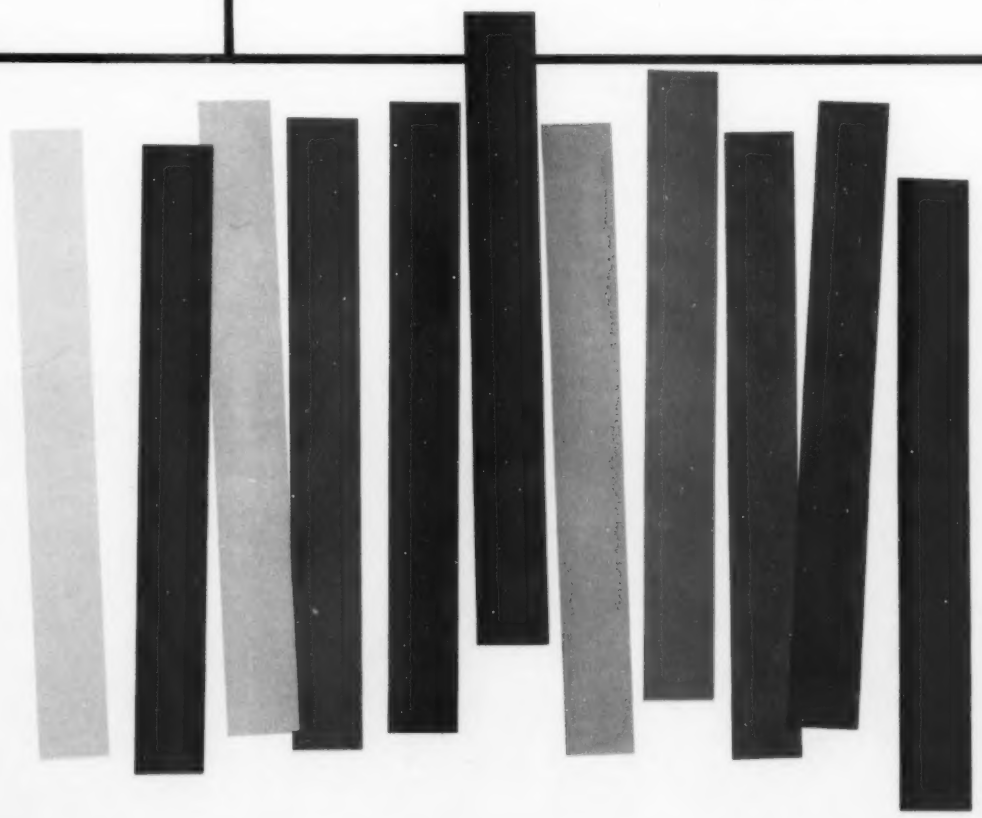
As stripes soar in fashion favor, the art of blending stripes to create a particular look underscores anew the creative starting point: thinking in color! for example, a ripple of gentle pastels in a stripe radiates with shimmering pearlescence...vivid tone on tone makes the same pattern blaze with excitement...interpreted in a dazzle of color the effect is a rainbow. Whatever the fashion mood desired...dreamy or dramatic...color tells your story. Dixie provides abundant impetus for the individual application of color with a poetic and prophetic Library of Colors backed by the proven performance of Dixie Yarns.



DIXIE MERCERIZING COMPANY, CHATTANOOGA, TENNESSEE • NEW YORK • PHILADELPHIA • READING • PROVIDENCE • CHICAGO • LOS ANGELES • MEBANE





DURENE® MERCERIZED • DYED AND BLEACHED • COMBED PEELER SINGLE AND PLY • TURBO AND STAPLE CHEMICAL FIBERS • TUFTING YARNS

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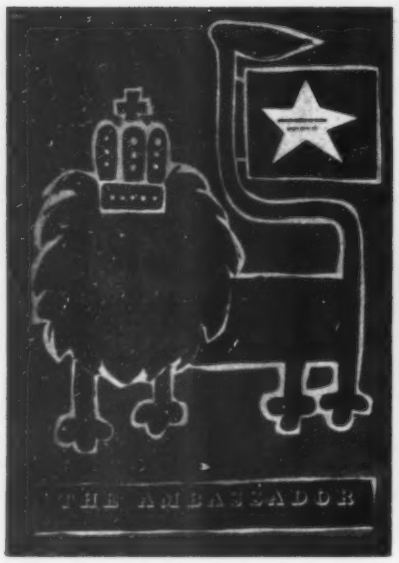

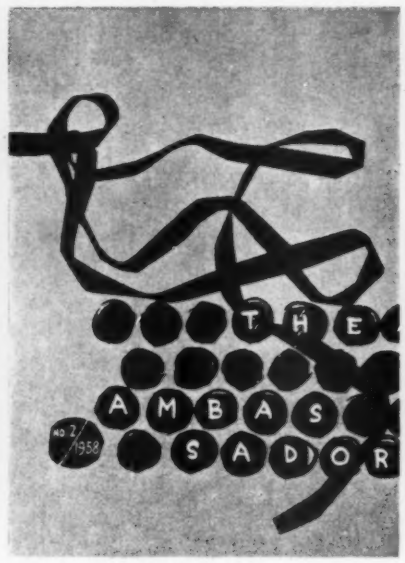

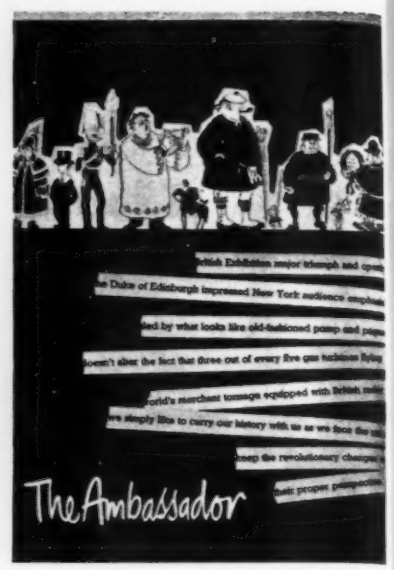

'The Ambassador', the British Export Magazine, appears monthly by subscription on the desks of leading retailers, manufacturers and designers all over the world. Specialising in fabrics, fibres, finishes, fashion and menswear, its curriculum covers also carpets, soft furnishings including household textiles, pottery and glass—in fact, everything of interest to a lively department store. The ready-to-wear industry uses 'The Ambassador's' fabric coverage as a resource for new ideas and as a reference library for fabric trends. 'The Ambassador' combines imaginative presentation with factual reporting.

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IS PUBLISHED MONTHLY AT 49 PARK LANE, LONDON W.I.

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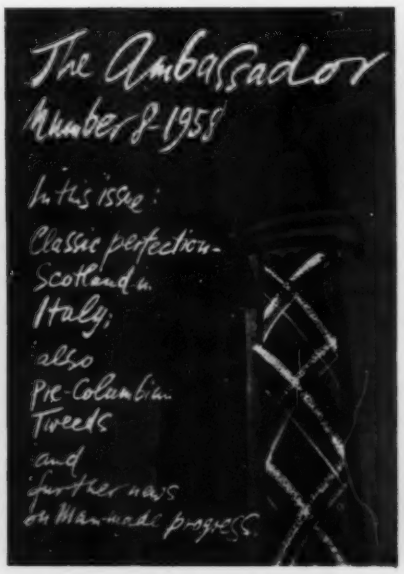

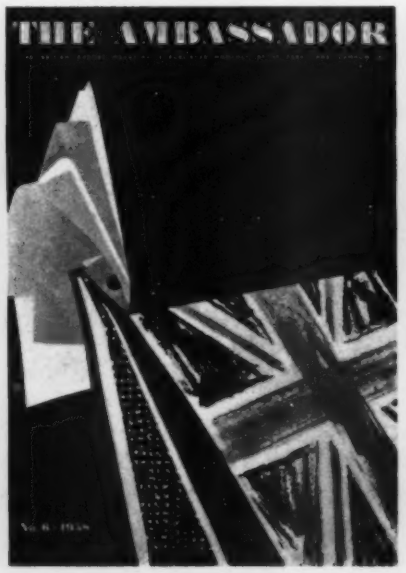

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A MAN YOU CAN LEAN ON THAT'S KLOPMAN!

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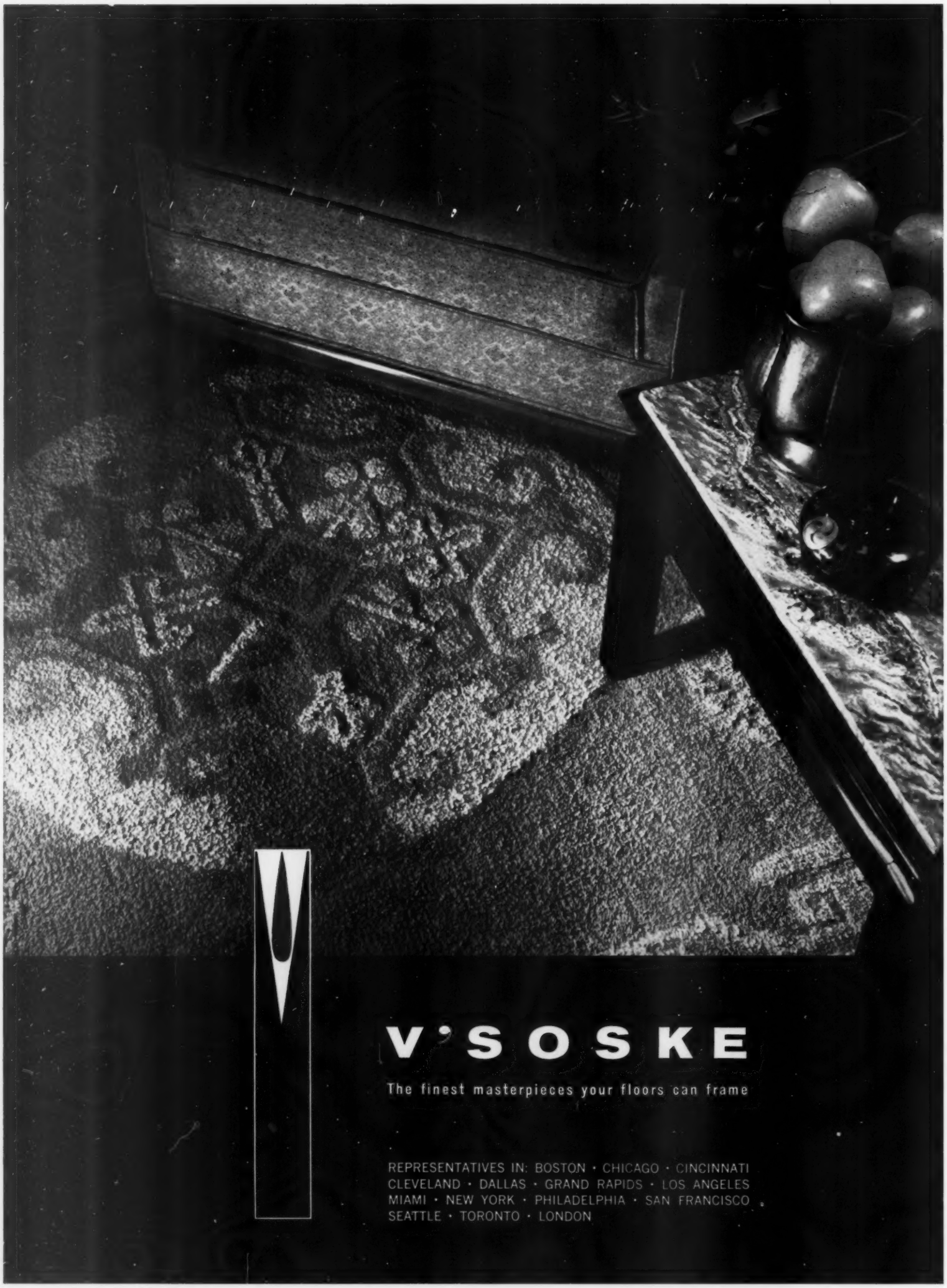

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PAM PAM by EVERFAST®

...another beautiful Everglaze® BanCare® cotton

Only loving care and undivided attention could create a fabric line as brilliant as Cone cotton corduroy! It's a love affair with news-stirring design, with important colors, with so many different and luxurious surface effects—what bliss! Take, for instance, MOBY DICK, wide wale and rich as velvet...WIDE WIDE WALE, ultra-wide and exceptionally soft...ST. DENIS, thick-set and sturdy ...SPORTCORD, a fine-wale fabric...ST. MICHEL, a thick 'n' thin wale...ST. LO, the all important medium wale corduroy...GAYWALE, in a wonderful array of madras plaids and prints...GLADSTONE, a champion 12 oz. fabric...and, of course, Cone's own WASHCORD, the most widely used corduroy in the market today. Yes, at Cone corduroy is far more than a fabric. It's a love affair with a happy sales ending...for you. Stock up now!

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The French Have a Feeling For Fabric . . . The French Have a Fondness For Rhovyl

The dashing red, white and blue "Tour de France" shirt of Rhovyl vinyon, worn by *"La Plume de ma Tante's"* Jacques Legras and admired by Mademoiselle Evee Lynn of the same hilarious Broadway hit, is a pleasantly mad affair with large pockets fore and aft, useful, we suppose, for transporting snacks, liquid refreshment, and what have you.

The "Tour de France" is a pedal of a mere 3,000 miles or so that meanders over the face of France, climbs an alp or two, and drops in and out of a few neighboring countries for good measure. All contestants in the "Tour" wear shirts of Rhovyl vinyon. They have to. Société Rhovyl is one of the sponsors. We understand however, that Rhovyl properties are just right for this sort of thing. Indeed, Rhovyl is just right for quite a few things and, in fact, its versatility and practicality have made it the most widely used man-made fibre in France. (And it was in France, remember, that the first man-made fibre was born over seventy years ago.)

You'll soon be finding Rhovyl alone or in blends with other fibres, in many of the things you wear and use —in wonderful new kinds of knitted wear; in lighter, warmer blankets and cold weather clothes; in longer-wearing, easy to care for carpeting and upholstery; in work clothes and industrial fabrics impervious to chemicals . . . the list is endless.

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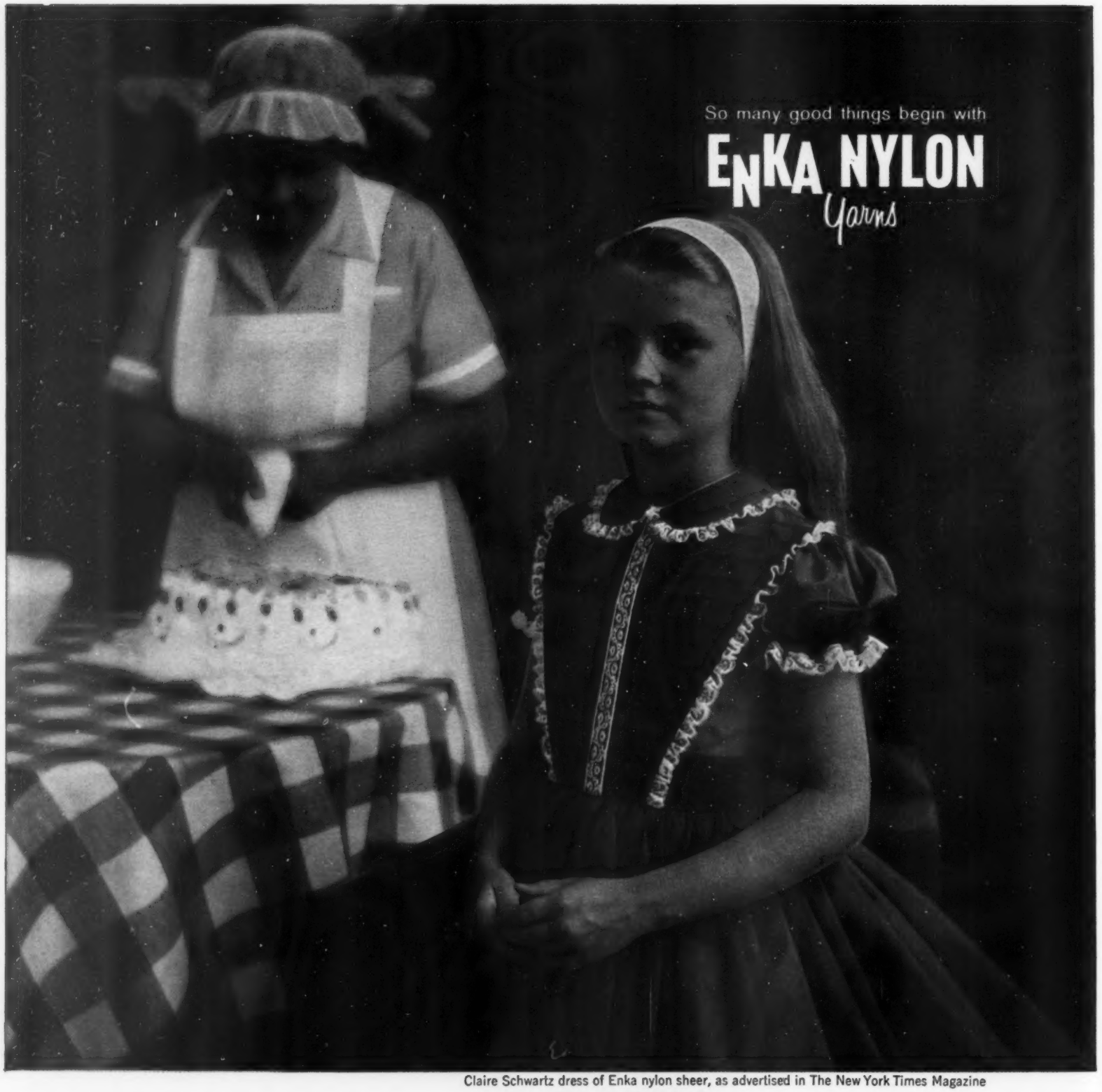

Claire Schwartz dress of Enka nylon sheer, as advertised in The New York Times Magazine

Why you should specify ENKA NYLON for your sheers

ENKA NYLON is a different nylon—in its molecular structure. This results in yarn which has a greater absorbency and affinity for dyes to produce deep, true, vibrant colors. Enka's 30 denier nylon is produced *especially* for the sheer market in a larger filament size to produce a smoother fabric with a greater versatility of hand, which can be readily controlled during the finishing process. Enka has been telling the advantages of these differences to mills, converters, retailers and consumers. This story became a success story this Spring—the kind of story that has made the trade sit up and take notice. It can be your success story, too.

Creative Enka research is constantly working to develop the new and exciting novelty fabrics and yarns which add zest to sheers. Working in close conjunction with mills, experiments are constantly being conducted on colors, texture and pattern effects that have the "new look" in sheers that fashion is ever seeking.

And, as sheers are important to you, they are important to Enka. So important, in fact, that Enka promotes them extensively through all channels of distribution. For holiday 1959 and Spring 1960, Enka ran 25 consumer ads, 150 merchandising trade ads and mailed 184,000 brochures on nylon sheers. And that's not counting Enka's tremendous publicity campaigns, or in-store merchandising.

Find out how you, too, can profit by changing to Enka nylon. Call Enka Merchandising at 350 Fifth Ave., New York 1, N. Y. PEnnsylvania 6-2300. Or, contact the Enka Sales office nearest you.

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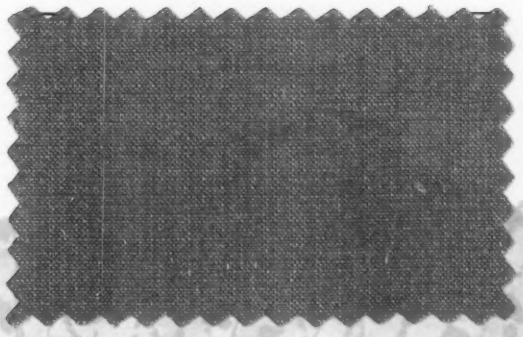

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Designed for the discriminating woman whose experienced eye recognizes at a glance that Auburn Silks are always in fashion, always speak quality.

For casual and sports wear, Auburn's color-planned patterned silks and dyed-to-match solid silks represent American fabric design at its best.

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These are yarns that *inspire* fashion ideas in fabrics . . . by providing the means of creating innumerable decorative and novelty effects, patterns, and colors as well as thick, thin, even or random spacing. And, while fabrics of TASLAN* Yarns possess a special luxury of hand and texture, they are abrasion-resistant, non-pilling, and long-wearing.

TASLAN* Intertextured Yarns by Branson may be core-bulked Nylon, Dacron, Rayon, Acetate, Arnel, Orlon, or Wool . . . and range from 800 to 6000 denier. To create fabrics with fashion-wise design and lasting luxury, look to TASLAN* Intertextured Yarns by Branson!

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A *Lanson* Fashion

We heard a woman say this in a Fifth Avenue store last week. And she's right. You can take the most beautiful fabric plus the most exciting fashion (and raincoats today are exciting fashion) and if you don't top them off with a quality water-repellent finish that will perform to her satisfaction you're missing the rainboat. The discerning woman today is searching for this ideal trio. She looks for brand names because she's told to in every publication she reads and she remembers the good ones *as well as the bad ones.* She discriminates when she buys a raincoat. And what about you? Are you completing this ideal trio for her by using the best water-repellent finish that money can buy at a price you want to spend? Do you actually specify the type of finish you want by name? Why shouldn't you reap the benefits of the research and advertising time and money spent to develop a finish like **NORANE®**... the quality finish with a lot of mileage? The COHN • HALL • MARX COMPANY have finished this fabric with NORANE. Look at it carefully. It's from a brand new group of color-coordinated Topgrain weaves, plain and fancies, of mercerized cotton, developed for raincoats and every kind of sportswear you can think of.

For information about this new line of AMERITEX® *fabrics, call LOngacre 4-6000 or visit the* COHN · HALL · MARX *showrooms at 1412 Broadway, New York City.*

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What is Curon?

Curon is a multicellular plastic (not rubber) foam material. It's featherlight, yet exceptionally durable. It has a spongy hand and a unique sparkle caused by millions of open and closed cells. The result of an exclusive formula, Curon is made by blending various chemicals, which are then "baked" in giant size "loaves"—usually 60 feet long, 15 inches high, and of varying width. These are then sliced into any desired thickness, from 1/16" to 5½", depending on their intended end uses.

What is the Curon-ize process?

It's the process of bonding Curon to fabric by a special heat and pressure method so firm it will not separate regardless of wear, washing or dry cleaning.

What fabrics can be Curon-ized?

All fabrics, woven or knitted, regardless of natural or synthetic fiber content. Everything from bulky wool or cotton knits to lightweight jerseys, cotton tapestries, poplins, tweeds, supple vinyls...virtually anything.

What are Curon's advantages in wearing apparel?

As insulation in clothing, Curon enables lighter weight fabrics to keep you warmer than ever before—with no loss of comfort. For Curon itself weighs almost nothing, yet it doubles the warmth when bonded to or quilted with other fabrics. Curon is also a wonderful fabric stabilizer. It helps retain shape. It keeps knitted fabric from stretching or sagging. And since Curon is both washable *and* dry-cleanable—which is not true of all foams—it can be used to advantage in all kinds of fashion.

What are Curon's other end uses?

The scope is unlimited. Curon makes possible new ideas in everything from furniture to soap dishes, from decorative acoustical wall coverings to place mats, scatter rugs and carpeting, as well as auto seats, caps and hats. It's used in gloves, ladies' handbags, shoes, boots, and hunting clothes. In cushions and bedding, its future is fantastic. The world of Curon is ever expanding—with more uses being developed continuously.

® Reg. T. M. REEVES BROTHERS, INC., New York

Curon® inside brings fashion outside

Here's the new multicellular foam which has changed our concept of cold weather wear. Thanks to Curon, today's winter fashions are as light as they are warm—fashionable as well as functional. To our fashion creators, Curon offers endless designing opportunities—new approaches to skiwear, rainwear, outerwear, sportswear, suits, even accessories. Lightweight fabrics laminated to Curon now become practical for sportswear, too. Our fashion world is constantly inventing new uses for Curon—so that American families can increasingly enjoy the pleasure of going outside, warmed by Curon foam.

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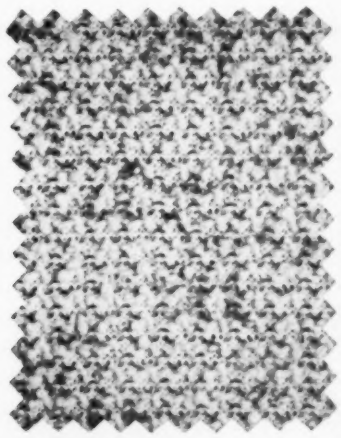

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if spring comes, can

ZEFRAN* & COTTON

acrylic

be far behind? (No!)

This Spring as *last* Spring, many a customer's fancy will turn to thoughts of Zefran® acrylic and cotton fabric. And for good reason: Zefran acrylic (the *super*natural fiber because it combines beauty and performance) brings out the *best* in cotton, makes the *most* of any fabric. This Spring's blend of Zefran acrylic and cotton has an irresistible please-touch-me look—and once your customers touch it, they'll *never* let it go! This wonderful blend **70% Zefran acrylic and 30% combed cotton** as woven by Signature Fabrics†, comes in a myriad of solids which include on and off-beat, brazen and bashful colors. Prints will be *colorful:* some abstract & arty, some prim & proper, some floral & geometric. This bread & butter collection of fabrics is available in three near-weightless weights—**poplin:** Zefran acrylic makes poplin *perkier;* **broadcloth:** Zefran acrylic makes broadcloth *smoother;* **batiste:** Zefran acrylic makes batiste *lighter.*

ZEFRAN ACRYLIC–THE SUPERNATURAL FIBER FOR THE CUSTOMER WHO WANTS EVERYTHING

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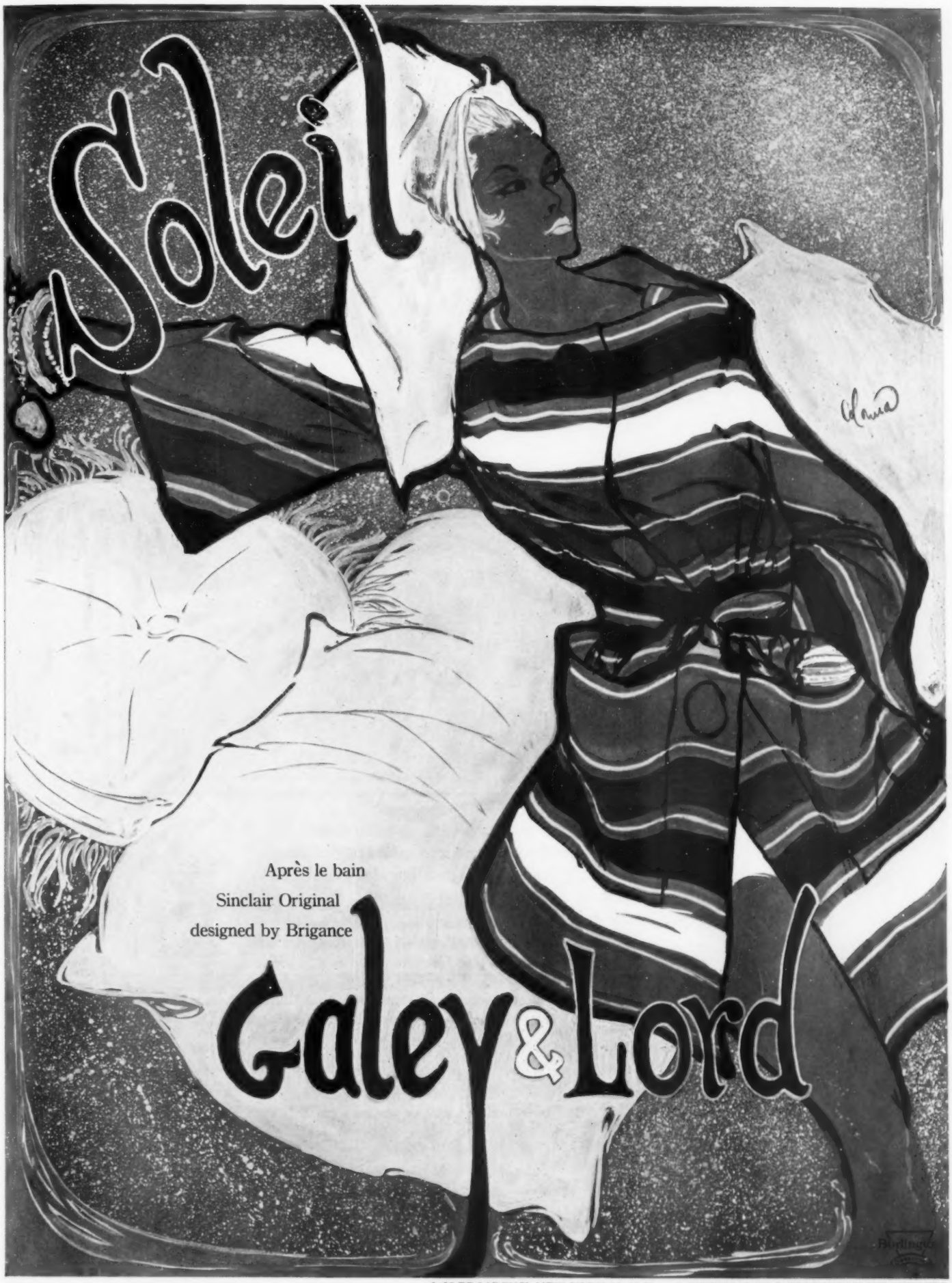

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Now truly fabulous results are possible in weaving fabrics for practically every line of goods!

With SAABA Textured Yarn, designers and weavers can translate fancy into fact . . . with a wondrous new assortment of surface effects, hands, drapes, and stretch combinations. And UNIFIL Loom Winders assure that nothing is lost in the *translation*.

SAABA can be given any of a wide range of physical characteristics with consistent uniformity . . . exactly what the designer desires. It can be used alone . . . in the filling or the warp, in combination with any known yarn. The resultant fabrics have a superior quality and a uniformity of bulk and coverage never before possible.

Today, any weave room that now benefits from the weaving-from-a-cone advantages of UNIFIL Loom Winders can easily extend its markets with SAABA fabrics. SAABA is produced by America's leading throwsters on machines developed and manufactured by LEESONA CORPORATION. To use it *successfully* and *profitably*, get all the facts from LEESONA CORPORATION, P. O. Box 1605, Providence 1, Rhode Island.

LEESONA

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23S.9.4

To the Readers of American Fabrics Magazine

UNDER THIS COLOR PLATE YOU WILL FIND A COUPON

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If you detach this coupon and return it to us on or before November 30, 1960, we will enter your order for one copy of the AF Encyclopedia of Textiles at the pre-publication price of $30. This involves a savings of $5. The official publication date of the AF Encyclopedia is November 30, 1960. After that date, it will be priced at $35.

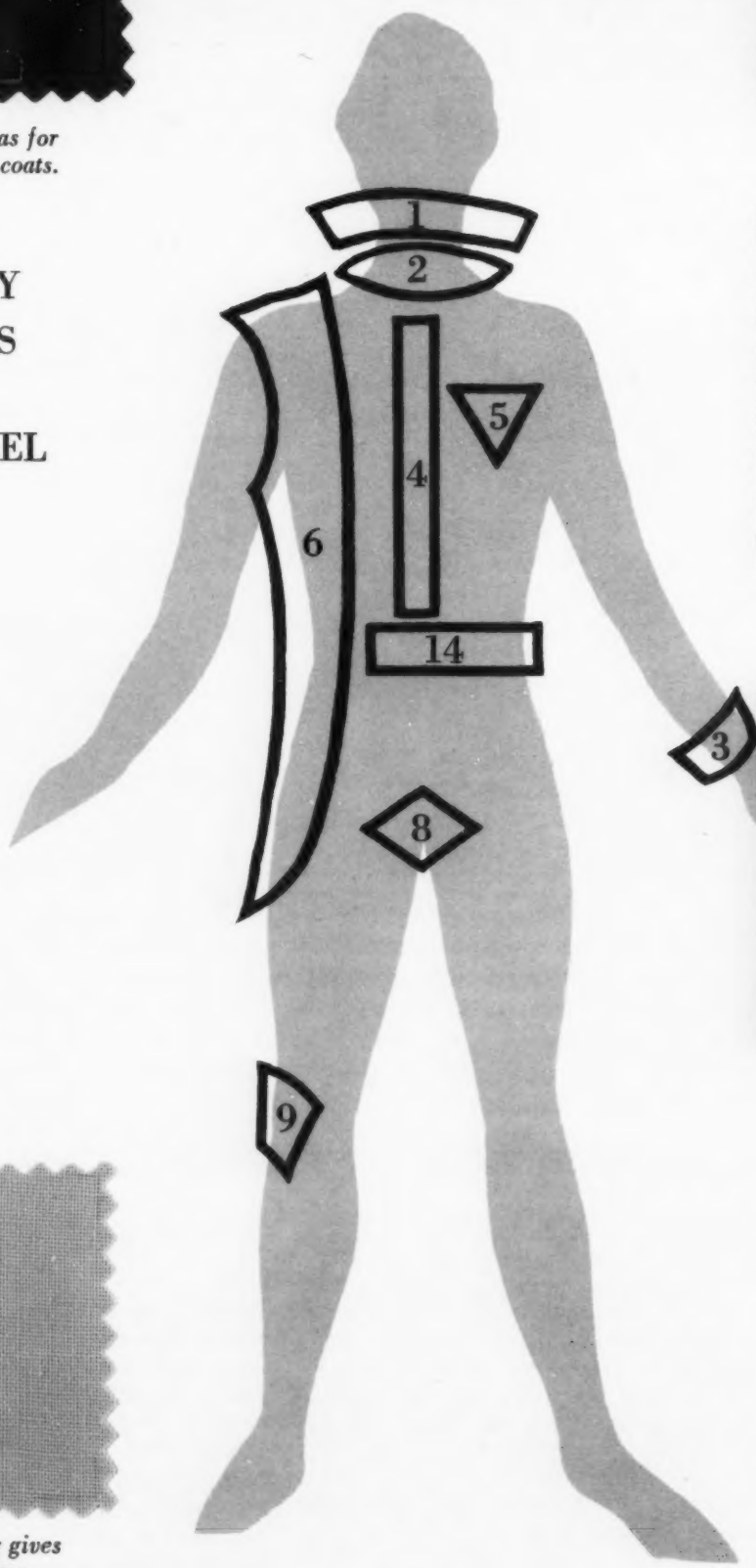
GUARANTEE. The AF Encyclopedia of Textiles is a one-volume work of over 700 pages covering the whole field of textiles with pointed and dramatic illustrations on almost every page. Those who have seen advance proofs, declare it to be the most practical and readable reference work ever published on the subject of textiles. It is hard for us to believe you will not agree with this verdict. However, $30 is a substantial sum to invest even for so valuable a book as we know this to be, and we would like you to see and use the Encyclopedia before you commit yourself. *Therefore we make this guarantee:* if – after you receive your copy – you are not entirely satisfied, you may return it and you will receive no bill. If you have already sent your check, it will be refunded. *This guarantee holds provided you return your copy within 14 days after it reaches you.*

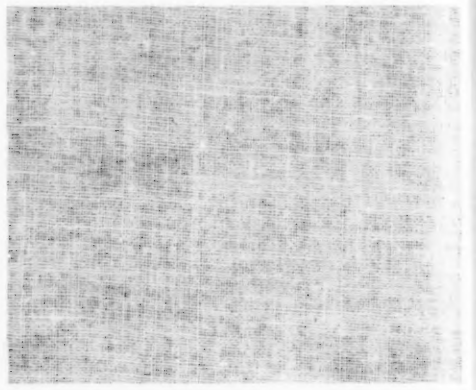
Melloflex coat front canvas for men's and women's suits, coats.

Interfacing in wide color range for women's dresses, blouses.

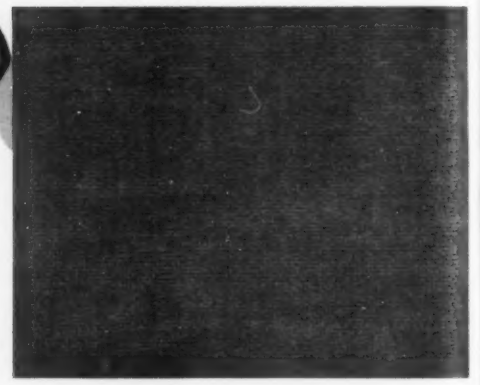
SOME of the MANY HIDDEN FACINGS in MEN'S and WOMEN'S APPAREL

1. *Collar linings.*
2. *Collar band linings.*
3. *Cuff linings.*
4. *Shirt placket linings.*
5. *Pocket flap linings.*
6. *Suit front linings.*
7. *Robe front linings.*
8. *Pant crotch facings.*
9. *Pant knee linings.*
10. *Walk short linings.*
11. *Bathing suit linings.*
12. *Rainwear linings.*
13. *Women's pant linings.*
14. *Waistband lining.*

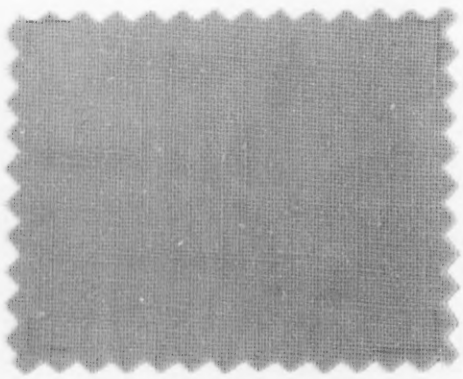




A Sanitized® cotton lining used for shorts and bathing suits.



Permadale collar canvas for men's and women's suits, coats.



A 2.85 weight interlining gives body to men's shirt collars.

Mellosan wash-wear interfacing designed for women's blouses.

The Hidden Face of a Garment

An informative discussion on interfacings and their importance to the apparel industries

When We Refer to the hidden face of a garment, it is no mere figure of speech. It describes a literal fact of apparel manufacturing. Every garment which depends on shape retention for its value has an inner face.

The inner face is the interlining or interfacing on which the garment depends for its body and shape retention. This face is hidden to all but the manufacturer of the garment.

The story of interfacings is a long and fascinating one. An hour spent in the historic costume collection of the Metropolitan Museum will reveal hundreds of intricate garments whose inner structure — built with interfacings — are many times more complicated than their outer shells.

Today we have streamlined and simplified our clothing. The interfacing structures of modern clothes are less obvious but they are no less important. In some cases they are more important than ever before.

Consider these two factors alone:

1. *An unprecedented demand for lightweight fabrics in all types of apparel for men, women and children.*
2. *A fantastic expansion in wash-wear garments.*

Without the right kind of interfacings it would have been virtually impossible to manufacture many of the lightweight and wash-wear garments which are today so important. Most of them depend on interfacings for both their appearance and their excellent performance.

It can be said categorically that the wrong interfacing can often ruin a garment and may well spell the difference between failure and success in merchandising a product.

The selection of the right interfacing is therefore the province of the expert. It must be accurately engineered for its particular end use. In making his selection of an interfacing, the expert uses the following basic criteria —

1. The correct weight.
2. The proper finish.
3. The most appropriate texture.
4. The best construction for the end use.
5. The right degree of stiffness or flexibility.
6. Proper shrinkage control.
7. A careful color match with the outer fabric.

The expert is looking for an interfacing which will give body, control and shape retention to the fashion garments for which it is designed.

Enter the firm of

DUBIN-HASKELL-JACOBSON, INC.

There are a number of companies which make or sell interfacings and interlinings, but Dubin-Haskell-Jacobson is leader in the field. It is the only operation of its kind in the world, specializing exclusively in the development and marketing of interfacings and interlinings for the apparel trades. It is also the largest in the world with a vertical setup which includes basic research, its own finishing facilities in the East and the South, and warehousing strategically located throughout the country. Its headquarters are in New York with offices throughout the country.

The success of Dubin-Haskell-Jacobson is built on service.

When an apparel designer or manufacturer comes to D-H-J with an interfacing problem, he deals directly with people who produce the product they sell and who have an intimate knowledge of apparel manufacturing in all its technical aspects. The designer is able to work with experts who know the technical specifications for every type of garment interfacing and who can draw upon a range of fibers, fabrics, weights, finishes and colors which is unequalled in the field.

For example, D-H-J produces a wash-wear interlining in some 40 stock fast colors. One interfacing, made for the shirting trade, comes in 56 shades. Above all, the D-H-J reputation for integrity, its refusal to approve a product until it has been thoroughly tested in its own research labs, has earned the respect and the confidence of the entire industry.

There was a time when Dubin-Haskell-Jacobson worked only with men's shirt houses, but the demand for its fabrics, its dependability, and the unique type of service it offers its customers, soon led D-H-J to broaden its scope to include all types of interlinings and interfacings for men's and women's apparel, as well as linings for such garments as beachwear, knit pants and walking shorts.

The company's intensive research program is constantly working to improve present products and to produce new products to satisfy the needs of tomorrow. And the apparel needs of tomorrow indicate a growing role for interlinings as the trend to lightweight wash-wear garments continues to grow by demand.

RIGHT AND ABOVE. Two in the series of advertisements with which D-H-J is creating brand identity with trade and consumer.

New Look in British Menswear

The innovations of British designer Lewis Aronson are a far cry from the conservative fashions usually associated with England.

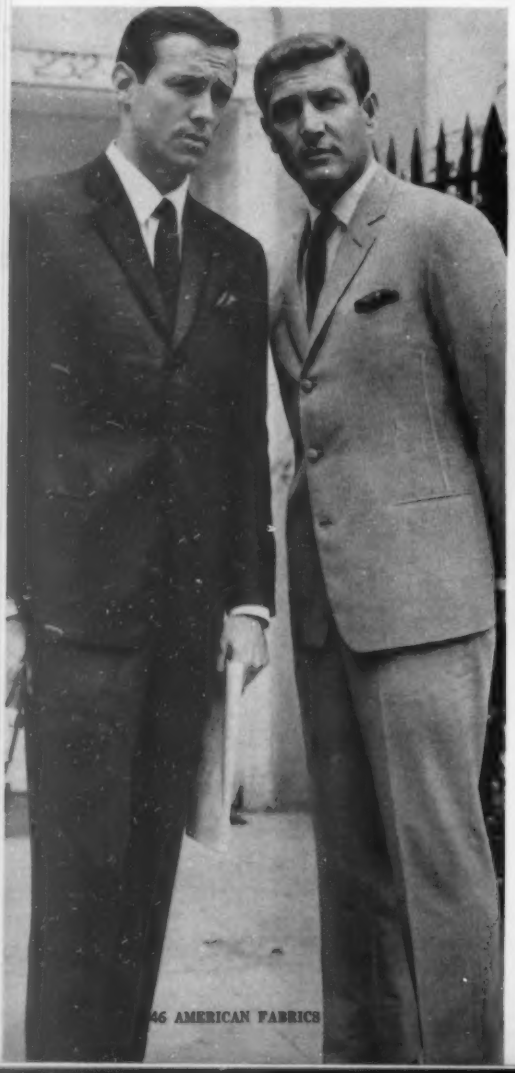
ABOVE. Town suit in Fortrel/rayon shows the "Clovis" sleeve, cut in one piece with the body for a rounded, comfortable shoulder. BELOW. Mr. Aronson's suits have a broad-shouldered, lean-hipped silhoutte and slightly longer bodies. Note edging trim on jackets.

ABOVE. Dinner suit of Arnel/wool corded stripe has black faille trim. BELOW. The "Clovis" sleeve has no buttons.

CREDIT CELANESE FIBERS Company with the intriguing idea of sponsoring a British menswear collection which goes a long way towards breaking down the stereotype of traditional British styling. All the garments shown on this page utilize Celanese fibers and blends. All are the work of Lewis Aronson, a rising star in the British fashion world. They were made in London and were shown in America at a recent fashion preview.

Mr. Aronson's approach to menswear is a rare amalgam of comfort and elegance. This is most notable in his design of decorative yet practical clothes for at-home entertaining. But it is also visible in his town suits, which frequently eliminate the shoulder seam for comfort (the Clovis sleeve), and which generally achieve a broad-shouldered yet lean-hipped silhouette which is reminiscent of Italian styling. Interestingly, almost all of Mr. Aronson's designs have a strong masculine flavor and this is not always true of garments which make so strong a break with tradition. The examples shown here indicate the range and versatility of his talent and offer the American menswear industry many fruitful ideas in fabric as well as in styling innovation.

Walk short suit with cross-over jacket in Fortrel/linen blend.



LEFT. Sportswear combines elegance and comfort. Effects are achieved through careful detailing. CENTER. At-home suits in contrasting over-shirts and slacks. Note the low-set trouser pockets. RIGHT. This lovat grey plaid country suit of Darvan has a cardigan top bordered in black knit.

COOSA

turns to the rich shades of nature

for a specially selected range of

FALL

1961 fashion

COLORS

S C T

STANDARD-COOSA-THATCHER

COOSA COLORS

for Fall 1961 . . .

RIPE CHERRY

HEMLOCK GREEN

SUMAC RED

CONIFER GREEN

OLEANDER PINK

MOUNTAIN OLIVE

DEEP MULBERRY

BLUE SPRUCE

Color Right . . . Fashion Right . . . Quality Right

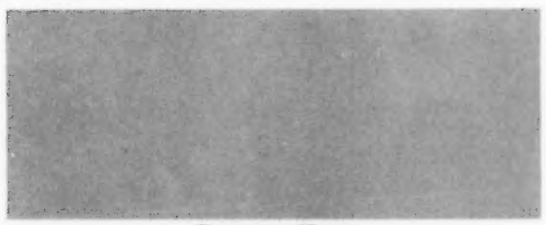
LOBELIA BLUE

SEQUOIA BROWN

HYACINTH BLUE

GOLD YARROW

VERBENA VIOLET

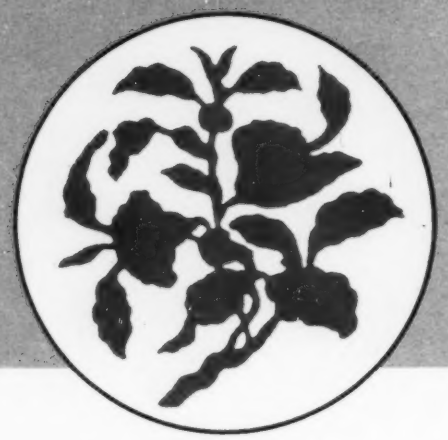


CACTUS TAN

PURPLE ASTER

CATTAIL BROWN

STANDARD-COOSA-THATCHER
SPINNERS | MERCERIZERS | DYERS | BLEACHERS
CHATTANOOGA 1, TENNESSEE



COLOR RIGHT

Color is the single most important factor in fabrics for both apparel and the home. It is **color** which makes fabric sing with life and freshness. It is **color** which transforms a silhouette into a fashion. It is **color** which gives vitality to a new season. The changing patterns of color preference are Coosa's province. This is our art and our business at one and the same time.

FASHION RIGHT

Coosa colors are geared to the most wanted directions in fashion and home fabrics. Our new colors are developed with the authority of the AMERICAN FABRICS' COLOR COUNCIL.

QUALITY CONTROL

Coosa takes great pride in the quality control system which guides its production line in Chattanooga. Fine combed and mercerized cotton yarns are used dyed to exacting standards. Coosa's yarns carry the guarantee of free-running uniformity in weaving and knitting.

STANDARD COLORS

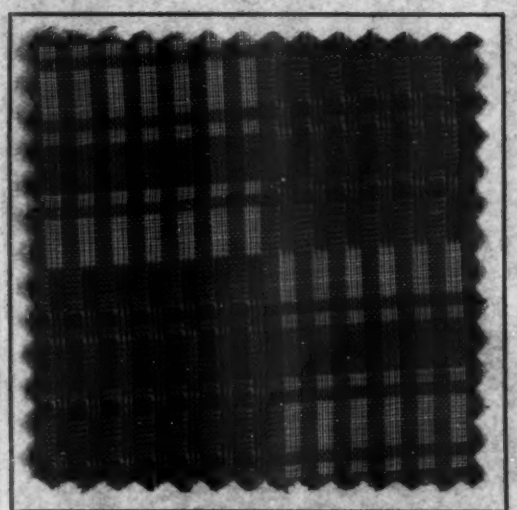
Coosa's standard color card offers a full spectrum of over one hundred fashion shades. Samples of the full range (112) shades may be obtained by writing to Standard-Coosa-Thatcher, Chattanooga 1, Tennessee or 350 Fifth Avenue, N. Y. 1, N. Y.

S C T

STANDARD-COOSA-THATCHER

SPINNERS | MERCERIZERS | DYERS | BLEACHERS

CHATTANOOGA 1, TENNESSEE



The sample shown, woven by Galey & Lord, (65% Dacron & 35% Cotton) is a double woven cloth, 45" width, 3½ oz. to the square yard.

— Reprinted courtesy Daily News Record, Sept. 27, 1960.

'Kente' Fabric Of Ghana Halts UN Action . . . Briefly

By JAMES TEAGUE

UNITED NATIONS, N. Y.—A fragment of Ghana's handwoven "kente" cloth was sandwiched here Monday between bitter diatribes against the United States by Cuba's Fidel Castro and the Czech's President Antonin Novotny.

It became the most broadly advertised bit of textiles, in its brief moment, perhaps any in history. Television cameras focused upon it, delegates of nearly 100 nations gazed at it, the UN press section was flooded with leaflets about it —and for a moment the General Assembly was silent.

Dr. Kwame Nkrumah, president of the Republic of Ghana, swathed in folds of the native silk fabric, presented it formally as a gift of his people to the UN. The green, yellow and maroon piece, measuring 19 feet 9 in. by 12 feet 7 in., was hung in its permanent place in the conference area outside the east delegates' entrance to the General Assembly Hall. With a sea-blue background, it proclaimed: "One Head Cannot Go Into Council" (two heads are better than one).

The cloth took 10 weavers three and a half months to complete, according to Andrews Eugene Asare, who directed production of it at the Dento Mills in Nsawam. He trained in weaving at Achiomta College in Ghana and at Blackburn Technical College in England.

"The most broadly advertised . . . textile . . . of perhaps any in history . . ."

Flash . . . The American Market's first development of the new Ghana trend is presented in the actual swatch alongside. It is a stunning example of creative fashion alertness to the current world scene, and to the needs of a market which welcomes the stimulus of new and different design approaches.

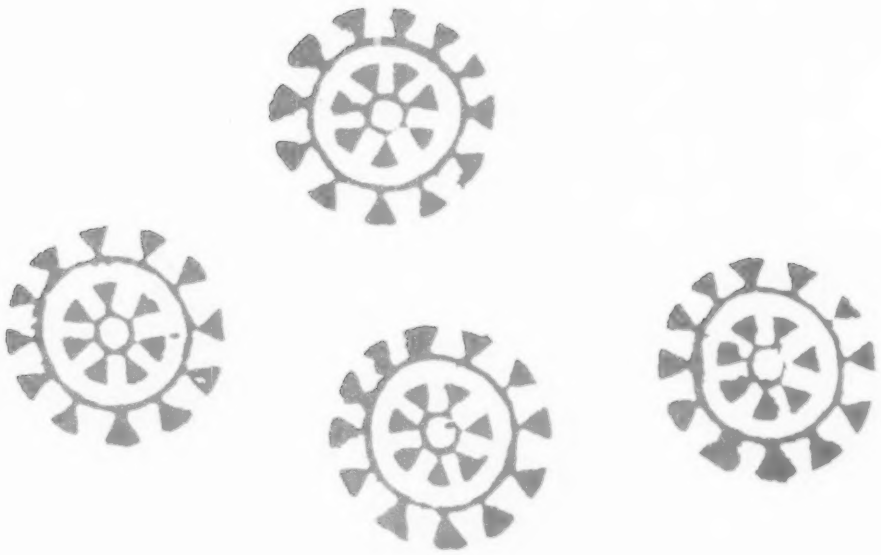
Through the cooperation of Galey & Lord, we are privileged to present this swatch from one of the first pieces to come off the looms...a whole new fashion trend may well be in the making.

KWAME NKRUMAH (ABOVE), PRIME MINISTER OF GHANA, IS SHOWN WEARING THE TRADITIONAL KENTE CLOTH ROBE OF THE ASHANTI WEAVERS.

GHANA

AN UNTAPPED SOURCE OF DESIGN INSPIRATION

The art of the African nations has been one of the dominant influences on modern Western painting and sculpture. Yet the same culture which produced this bronze mask *(Ghana, 17th Century)* also developed the beautiful Ashanti weavings known as Kente cloth. The fabric shown here is one of the many brilliantly colored textiles still produced in Ghana by traditional handicraft weaving methods which have been used for many centuries. Colors used include brilliant golds and deep reds, bright greens and blues which have much of the color feeling of ancient Peruvian fabrics.



THE TEXTILES OF GHANA

From the newly independent nation of Ghana come brilliant traditional textiles and a ceremonial way of dress which offers an untapped source of design inspiration to the American textile and fashion industries.

AMONG THE NEWLY emergent, independent nations of West Africa the most quickly developing is Ghana. Its coastal capital, Accra, is as cosmopolitan as any western city. Ghana is also a country of great contrasts, as are all the new nations of Africa. This contrast is visible in the architecture, the lives and background of its people, the topography of the land, and the uneven levels of its industrialization. But everywhere and on all levels is great hope, movement, change and anticipation.

Ghana is quickly donning the cloak of westernization which naturally accompanies industrialization, but she is also retaining many of the national customs which are so much a part of her. She is making conscious efforts to revitalize her traditional art and culture, including the ancient and distinctive art of her Ashanti Kente cloth weaving.

A Fresh Source of Textile Design

The textiles produced by the ancient Ashanti culture of Ghana offer a rich untapped source of design inspiration. The best known material is the *Kente* cloth, a fabric of intricate workmanship, whose history is surrounded with all the mystery and taboos characteristic of early societies. The Ashantis are a highly developed tribal group who are acclaimed for their beautiful, miniature brass carvings, which are used as gold weights, for their wood sculpture, which is the great West African art form, and for their satiric folktales – in addition to their weaving skill.

The great vitality and "sophistication" of African art has been a source of inspiration for much of our contemporary painting but the textiles shown on these pages have been relatively unknown to Americans. It is only within the last few years, since Ghana gained its independence and its delegates began to appear at the U.N. Headquarters in their colorful native clothing, that their fabrics and their way of dress has become known to the general public.

The editors of American Fabrics believe that these beautiful Ashanti weavings and the way they are worn can do much to enrich the contemporary fashion scene. We therefore offer some background information on their history.

A Fabric with an Ancient Tradition

Among the different fabrics from Ghana, *Kente* cloth is perhaps the most interesting for its unique style and patterning. It is woven in narrow strips and then pieced together by sewing. Its rich colors and complicated woven designs combine to form a fabric that is at once new and provocative. Incidentally, the word *Kente* is also the name of the toga-like robes worn as official dress in Ghana.

The history of *Kente* weaving dates back to antiquity. It is thought to have started in the town of Bonwire which is twenty-three miles from Kumasi. Originally the use of *Kente* was restricted to kings and all the weavers were charges of

(please turn)

PHOTOGRAPHS AND FABRICS COURTESY OF THE GHANA INFORMATION SERVICE
ARTIFACTS COURTESY OF THE MUSEUM OF PRIMITIVE ART

Kente cloth is still woven today in Ghana on primitive hand looms like the one shown above. The Ashanti weavers first produce the design in long narrow strips about 4 inches wide. The separate strips are then sewn together in a dropped repeat so that every other strip is matched. This creates the intricate box-like patterning which is typical of Kente.

This bronze water buffalo head from Ghana is very "modern" in feeling because we have grown accustomed to seeing contemporary European and American sculpture which was inspired by such traditional African art forms.

GHANA *(continued)*

the court. If a chief wanted a *Kente* woven he had to send a special emissary to the king, indicating the exact pattern he wanted, since each *Kente* pattern has a special name and symbolic meaning. If the king approved his selection, an official weaver was dispatched to him with orders to weave only what had been agreed upon. During the period the weaver worked at the chief's quarters, he was pledged to allow no one to see his work. In this way the patterns were kept secret. At the completion of his task he was paid a fee called a "gwasa," given in the form of sheep and drink.

Bark Tree Colorings

Kente was first woven from cotton yarns which were dyed with colorings produced from the barks of trees. The dyeing process was referred to as "Asante Biribie," which means "Ashanta something" or "Ashanti special." Later, under the

The display of woven Kente strips above, shows what the individual weavings look like before they are sewn together. There is infinite variety of pattern and each design has either a symbolic meaning or represents a particular tribal group very much as do the clan tartans of Scotland. The different patterns shown here are not sewn together. In a finished Kente cloth the same pattern is woven many times and the strips are then sewn together in staggered formation. Usually the ends of the strips are designed as a border to give the whole cloth a finished appearance.

chief of the Bonwires, Okloo, a new process was accidentally discovered and this changed both the texture and pattern of the cloth. It was discovered that a species of spider called Okanantan produced long silky yarns which the weavers could dye and use to execute more intricate designs. The sons of Okloo became the renowned weavers of their time.

Yarns from Old Silks

However, the silk *Kente* cloth now used in Ghana was originally made from imported European silks yarns. As early as the 17th Century the Ashantis came upon European silks, but not liking the patterns they saw, they took apart the fabrics and used the yarns to weave their own traditional designs. Later, new yarns were imported. Weavers then began to select their own yarns and, as the power of the kings declined, the industry became free.

Each pattern of the *Kente* cloth has a particular significance or represents a proverbial saying. It also represents the clan, social status and sex of the wearer and here one cannot help note a parallel to the Clan Tartans of Scotland. Certain designs also have ritualistic functions, such as the pattern used to cover the sleeping-couch of the chief. It is used to ward off evil spirits. *Kente* cloth is very much an integral part of the life and culture of the Ashantis, and is today a heritage which is proudly maintained in the ceremonial dress of Ghana's government officials.

The traditional art of *Kente* weaving still exists in Ghana as it did hundreds of years ago. There are still small shops in the provinces with one or two looms and weavers and occasionally an apprentice. The weavers take great pride in their work and feel that it is a way of life as well as a trade.

The Stamped Cloths of Ghana

Adinkira is another interesting type of fabric produced by

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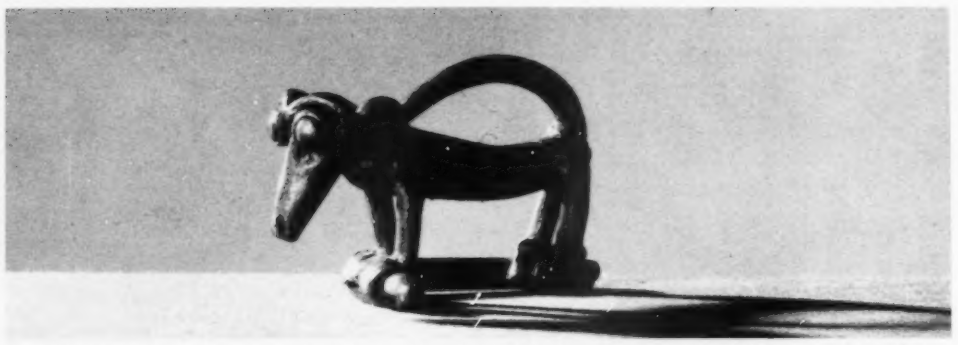


This 19th Century bronze Ashanti figure is only 2 inches long and was used as a gold weight.

GHANA *(continued)*

the people of Ghana. The *Adinkira* cloth is stamped or printed fabric. Either plain white calico or plain cloth dyed a russet brown is used. The russet brown is reserved for mourning attire but the white calico is printed with distinctive designs in natural dyes made from the barks of trees. Frequently additional decoration is added through colorful embroidery, usually in stripe formations.

To make the dye, the bark from a tree called Bodie is cut

(please turn)

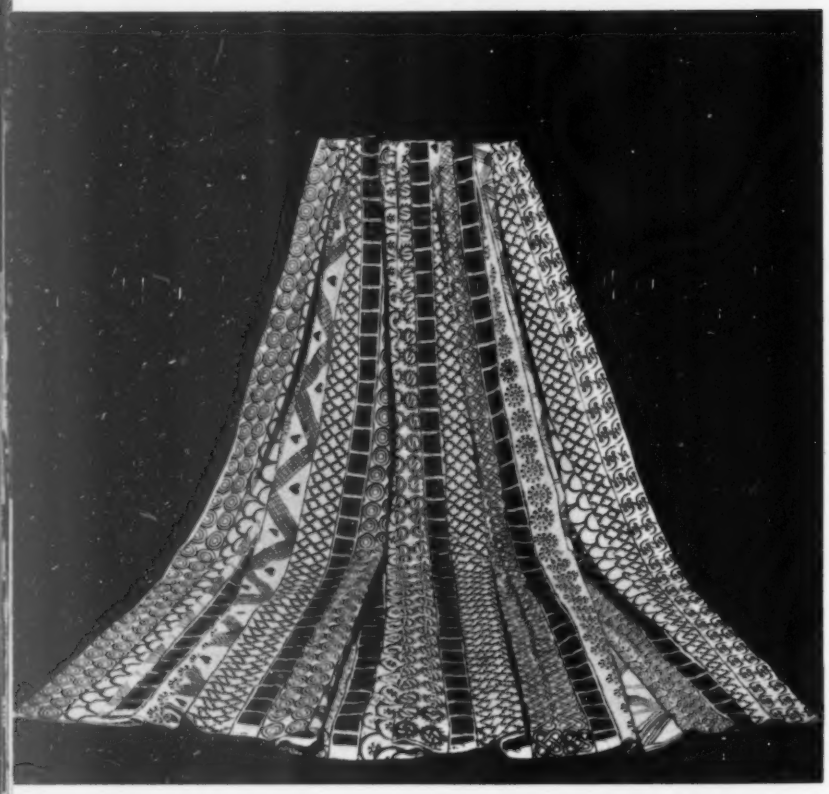
Though quite different in design and coloring, the printed Adinkira cloth *(left)* and the woven Kente *(right)* blend well together.

Printing the Adinkira cloth is a group enterprise. The design is stamped onto the cloth with pieces of carved calabash which are dipped into the dye pot. The dye paste is made by boiling the barks of the Bodie tree together with iron slag.

Inspiration for Modern Designers

The traditional Adinkira cloth which forms the background of this page offers a rich design source for modern prints. In Ghana, these cloths are printed with dark brown figures on off-white grounds and as such they have an extremely sophisticated look. But there are infinite ways of adapting these designs to contemporary fashion trends.

Brass gold weight from Ghana.



AT LEFT. The Adinkira cloth shown here is printed with figures which are traditional in Ghana. The figures are repeated in either stripe or box formations and are often alternated with brilliant bands of embroidery as in this example. As draped in the photograph, the designs immediately suggest neckwear patterns but could easily be adapted to many other end uses.

GHANA *(continued)*

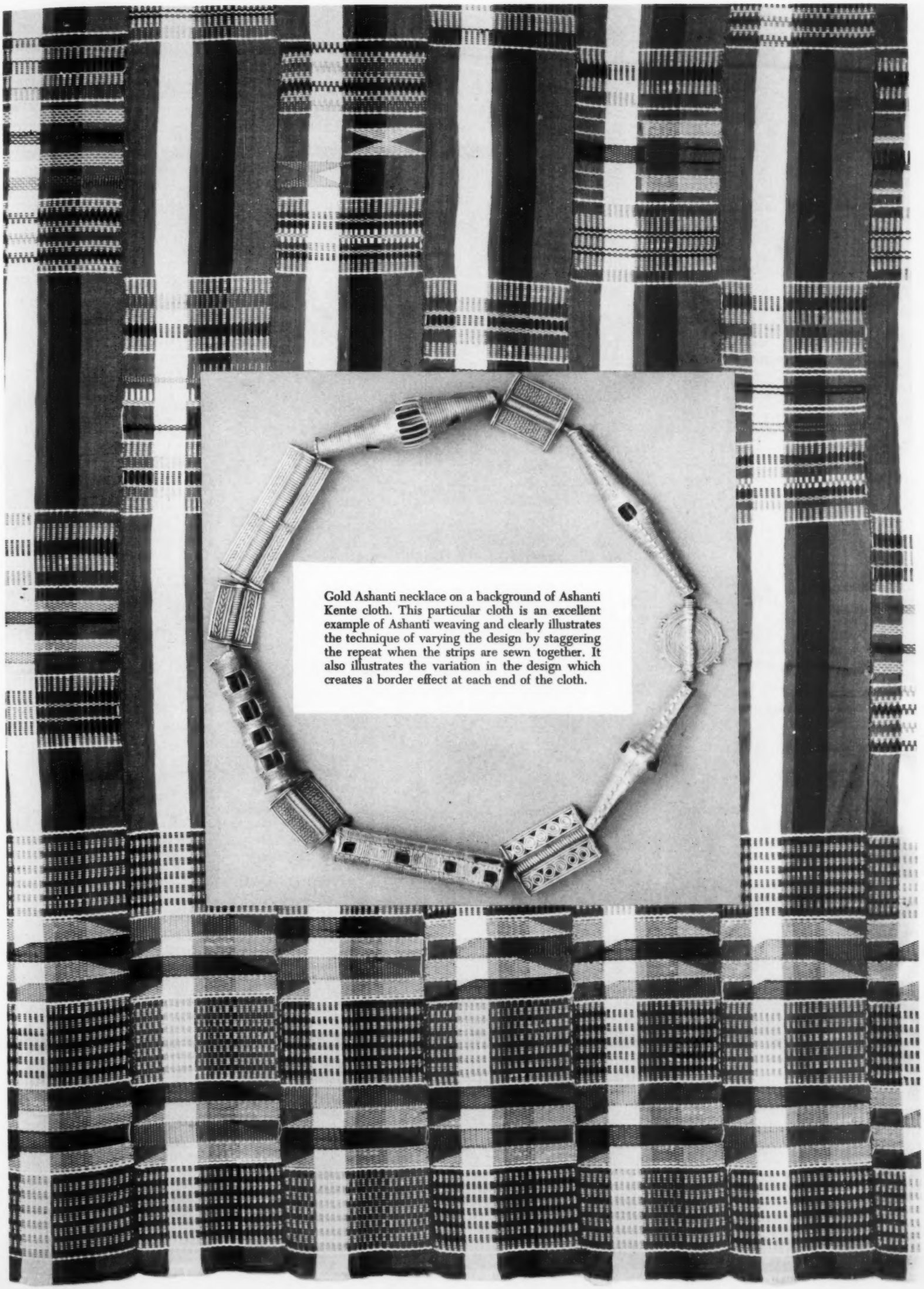
up and placed in a cooking pot together with lumps of iron slag (etia). The bark and slag are boiled for several hours until two thirds of the water has evaporated. The remainder of the water is then strained off. The residue is called *Adinkira Aduru* – Adinkira medicine – and it has the consistency of coal tar. When cooled it is ready for use.

The stamping or printing is done on a flat piece of ground which is cleared and swept. The cloth is drawn out taut with wooden pegs. The stamps are made from calabash gourds to which holding sticks have been attached so they can be held like a pen. Colors are strong and the designs are traditional and distinctively Ashanti.

A few typical patterns are shown on these pages. Like the *Kente* cloths, they have a boldness and a sophistication which – if interpreted creatively – could introduce a fresh new note into the American fashion scene.

(please turn)

This photograph of Ghanaian dancers suggests that by no means all the fabrics used in Ghana are native in origin. Some of those shown here are obviously imports, but the traditional way they are worn gives them a new interest and offers the women's wear industry a fashion silhouette beautifully adapted to the Kente and Adinkira cloths we show in this presentation.



Gold Ashanti necklace on a background of Ashanti Kente cloth. This particular cloth is an excellent example of Ashanti weaving and clearly illustrates the technique of varying the design by staggering the repeat when the strips are sewn together. It also illustrates the variation in the design which creates a border effect at each end of the cloth.

LEFT. Much of the visual excitement of Kente cloth comes from the strong patterning and the scale of the design which is shown here approximately half size.

AFRICA
IN THE NEWS!

As the "Dark Continent" awakens, its people, its culture and its traditions provoke the interest and curiosity of the West. Out of this interest come the materials of fashion and the opportunity to add a new note to the fabric-fashion scene.

THE PHOTOGRAPH ON THE left shows King Kabaka Mutesa II, ruler of the British protectorate of Buganda in West Africa. The grace and dignity of the figure, the elegance and refinement of his royal robes, equals the best of haute couture. It suggests that not alone Ghana, but many of the nations in Africa, can become a rich and much-needed source of fresh inspiration for the textile-apparel industries of the Western World.

American Fabrics is proud to be the first to launch what we are confident will soon become a groundswell of interest in and excitement with the textiles of Ghana — an interest which will inevitably lead to new explorations in the culture and design forms of the newly emerging African nations.

OPPOSITE PAGE. Wood fertility statue from Ghana on a background of Kente cloth. A full-size silk and cotton Kente cloth usually measures approximately 6 x 10 feet and can be purchased at retail in the United States for about $150. The price varies according to the size and the fibers used. *American Fabrics will be glad to furnish the names and addresses of importers on request.*

A GROWING DRESS-UP TREND IN

at home clothes

Branell

American designers, responding to the new interest in at-home entertaining, are creating uninhibited fashions for a sophisticated audience.

Anne Fogarty

To Those Who Believe – as we do – that the level of taste and sophistication is rising in America, it is always a pleasure to find new corroboration in unexpected areas. One such area is the field of at-home clothes. For the first time in many years, at-home fashions are beginning to assume new and profitable proportions for those manufacturers and designers who have taken the trouble to re-align their fashion thinking with the shifting patterns of social and cultural life in America. A substantial and growing segment of the American public is beginning to take pleasure in a way of life which includes fairly elaborate at-home entertaining and clothes to match the occasion. Those who are alert to this trend are beginning to cater to an expanding audience.

How can we define the new at-home clothes?

They are, of course, many things to many different people but all such clothes – regardless of price – have a quality in common. This quality is admirably described by the designer, Tina Leser, who has achieved an international reputation for her imaginative and creative approach to both fabric and fashion.

Miss Leser says:

"At-home clothes are dress-up evening clothes and fun clothes at the same time. They give a woman a chance to romanticize her home life. They may be elaborate but they must always be casual and comfortable enough to make a woman feel she can sit on the floor."

To Sylvan Rich (*Martini*) – who designed his first hostess gown in 1933 – at-home clothes should be extremely feminine, may even be extravagant, but must always be designed to fit into a private, home background rather than a public one. As such he sees them as relaxed, flowing garments of great elegance.

Each designer has a personal definition and an individual approach to at-home clothes but for all designers, the actual creation of such garments is pure joy – an aesthetic binge. They can be completely

Miss Leser's S. American shaggy print skirt is Crylor.

Oriental influence in Miss Leser's printed silk costume.

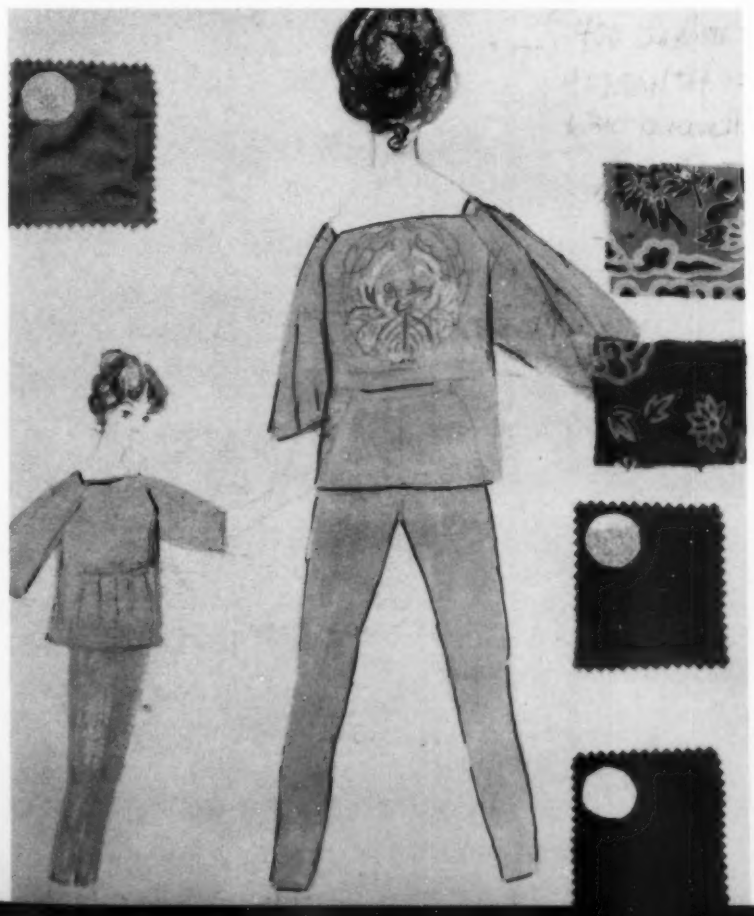
uninhibited. At-home clothes are not limited by the prevailing dictates of fashion. There are no restrictions on fabric, on silhouette, on conception. That is why such garments are so colorful, so imaginative and so attractive to the sophisticated woman who is looking for a costume which will express her own individuality and will – as Miss Leser says – have the quality of "fun" clothes.

The at-home clothes shown on these pages illustrate the work of Tina Leser, Sylvan Rich, Jack Lenor Larsen, Anne Fogarty and Branell. They reveal a creative approach to changing fashions for our changing times. The volume of business done in at-home clothes is still relatively small but it is growing and holds great promise for the future because – like women's pants – it fills a definite need in our culture. As such it represents a fascinating challenge to the creativity of both fabric and fashion designers and an expanding opportunity for mill, converter and manufacturer.

(please turn)

Tina Leser

Japanese influence in Miss Leser's sketch of 2-piece silk.



Indian theme. T. L.'s designs often derive from her travels.

Sylvan Rich of Martini

Sylvan Rich has been designing very elegant, very feminine at-home clothes for close to 30 years. He has influenced and been influenced by many of the dominant fashion trends of his time and has always preserved the individual stamp of his talent as a designer. To see his creations through the years is a fascinating glimpse into the changing and often recurring tastes of the past 25 years. On these pages we show sketches from Mr. Rich's fashion notebook, indicating the years in which these different fashion silhouettes were in vogue. The 1960 collection, responding to the expanding interest in sophisticated at-home clothes, is the most extensive Mr. Rich has ever designed.

Black velvet, plaid taffeta.

One-piece culotte gown.

1946

Jersey pants, wool jacket.

Crepe-lace Flamenco robe.

Plum silk satin and lace.

Wool jersey – silk crepe.

1956

Straight cut wool plaid.

Gold brocade culottes.

A harem costume in diaphanous silk chiffon with embroidered matching jersey bolero.

Printed paisley wool is used for flowing culottes and matching shirtwaist blouse.

1960

Highlights from the elegant at-home clothes of Sylvan Rich reveal the changes in design and silhouette through the years.

at home clothes

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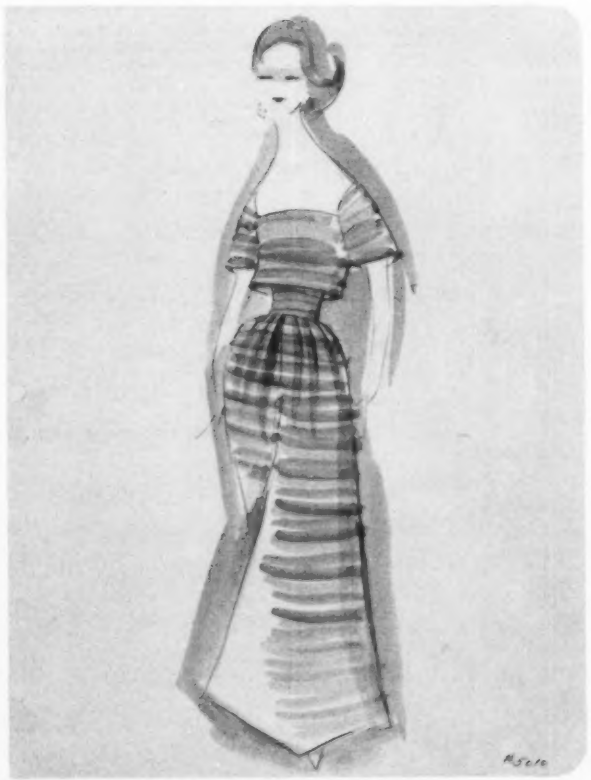
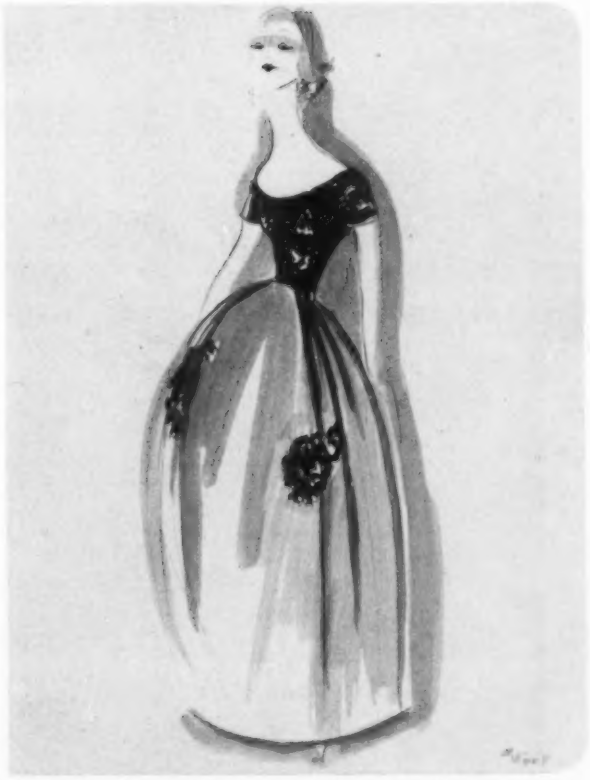


The Siamese influence in a striped silk costume of wide culottes with pleated waist.

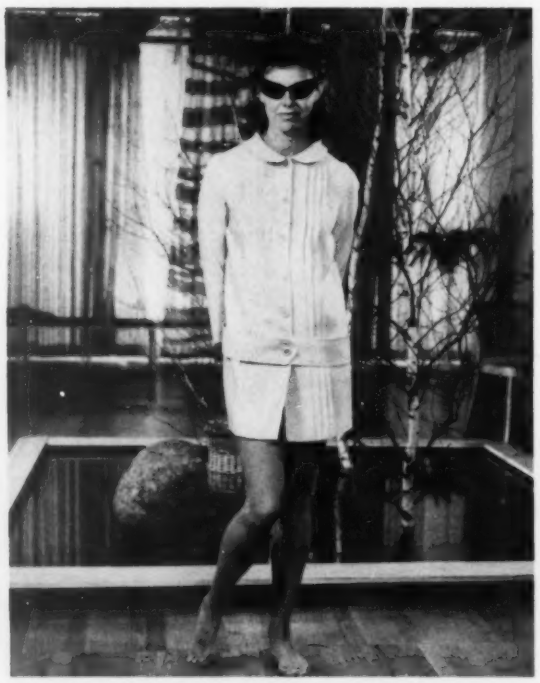


Mr. Rich achieves a Renaissance elegance with imported printed velveteen and satin.

at home clothes

Jack Lenor Larson, famous as a designer and weaver of interior fabrics, recently turned his hand to at-home leisure clothes.

Mr. Larsen's interest in Mexico is revealed in this straight-hanging robe of simple cut and construction. The multi-colored stripes are bias cut and stitched to achieve a fresh, new look.



The short, belted shirt-jacket is also Latin American in its design inspiration, uses pleating for effect.

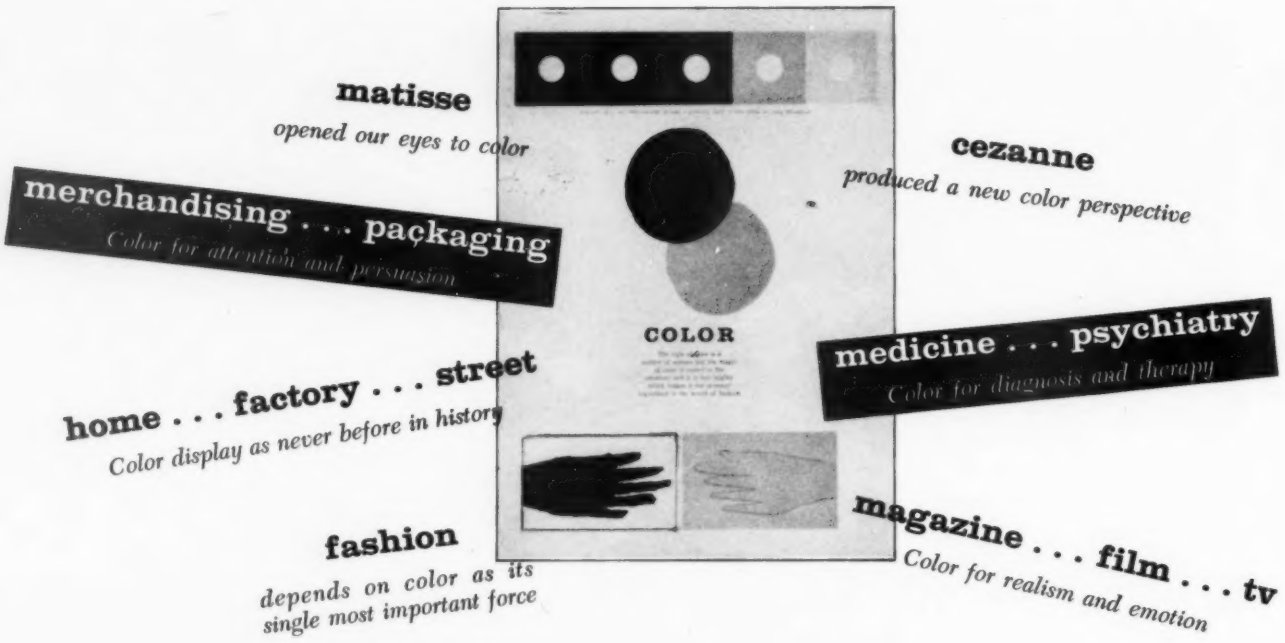
Mr. Larsen has long been known for fabrics with the handicraft look, as in this man's leisure costume.

5TH CENTURY COPTIC TEXTILE COURTESY KANEGAFUCHI SPINNING CO.

THE SYMBOLIC WORLD OF COLOR

The fascinating symbolism of color, its uses in modern psycho-therapy, its multifold meanings in ancient mythology and religion, offer rich material to the textile stylist, the colorist and the fashion designer in search of new color themes and fresh approaches to color promotion

By Rene Fueloep-Miller


matisse
opened our eyes to color
cezanne
produced a new color perspective
merchandising . . . packaging
Color for attention and persuasion
COLOR
medicine . . . psychiatry
Color for diagnosis and therapy
home . . . factory . . . street
Color display as never before in history
fashion
depends on color as its single most important force
magazine . . . film . . . tv
Color for realism and emotion

the SYMBOLIC WORLD of COLOR

EVER SINCE the mythical moment when the command rang out: There shall be light! – and the earth, the waters and the sky lit up in colors, man has been deeply affected by the variety of shades and hues which the rising and setting sun and the passing of the seasons evoke.

Beginning with the first pre-historic wall paintings of the Magdalenian period, which were found in the rock shelters and limestone caves known as "the picture galleries of Altamira," men throughout the ages have enhanced and expanded the color scheme of nature by a kind of "second creation" – the color world of art. Since the time primitive man first began to paint and tattoo his body, to adorn himself with colorful plumage, glittering stones and bright bits of material, up to the very latest vogue in fashions and cosmetics, men and especially women have yielded to the irrepressible urge to improve their natural appearance by embellishing the texture of their skin and the color of their complexion. From the earliest spoken and written images in literature, from Homer's "light-footed, dawn-colored Eos" to Eliot's "blue of larkspur, blue of Mary's color" – poets of every tongue have associated different hues with certain moods and emotions.

Color for the Millions

Yet never before in all world history has there been a time in which color pervaded every field of life and human endeavor to the degree it does today. This is predominantly due to the achievements and the practical application of modern science. Thanks to the democratizing effect of mass production, the rich display of colors which used to be a prerogative of the privileged few, has now come within easy reach of the masses. The average home of today is an outburst of colors from roof to basement. Not only furniture, draperies, rugs and walls are carefully chosen in decorator colors, but even telephones, kitchen and bathroom appliances match the home color scheme.

Modern electricity, which used to content itself with bringing light into the darkness, now draws on mobile color substances which illuminate the nocturnal sky with dazzling effect. Colored flood lights, beamed from concealed sources, light up whole city blocks. The aggressive glare of contrasting neon signs, which switch on and off at will, catches both the eye and the attention.

Art and Science in the Service of Color

A wide selection of color reproductions of great paintings is today available at a low cost to anyone who cares to buy them. The daring color schemes of the Impressionists, which shocked their contemporaries, are today stock-in-trade in the commercial art field and are used in all forms of advertising and display.

The mass magazines abound in full-color illustrations. Colored motion pictures and color TV are replacing black-and-white images on the screen. Two abstract movie pioneers – Hans Richter and Viking Eggeling – accomplished fascinating visual treats by adapting the technique of Chinese scroll paintings. Richter, who created the "absolute film" used the camera as an artist uses his brush. His films are abstract paintings in motion. Ladislaus Moholy-Nagy fashioned "Lichtspiele" (plays of light) in which the major trends in modern art – Impressionism, Expressionism, Cubism, Dadaism, Surrealism – were all represented on film. More recently Cinerama, Cinemascope and Vista-Vision have combined color and three dimensional approach to create the illusion that the viewer is part and parcel of the mobile color show.

Rene Fueloep-Miller – novelist, scholar, teacher, historian, sociologist, editor and author of 30 wide-ranging books of fiction and non-fiction – now teaches at Hunter College in New York. His most recent book is a novel, "The Silver Bacchanal," published by Atheneum.

Physics and chemistry, photo-electric colorimetry and spectrophotometry have fashioned new color effects which expand all previously existing color ranges and include gloss and opacity, fluorescent and phosphorescent lights. Scientists are about to reach out into the universe so as to bring the color effects of distant stars down to earth.

The Practical Uses of Color

A typical feature of this "grand siècle" of color, one which distinguishes our age from earlier color-conscious ages, is the changed role which color plays in modern life. As we shall see, in times gone by, colors were predominantly used as symbols of religious or aesthetic feelings, or to signify class and caste distinctions. Today, the use of color serves mostly practical, utilitarian purposes.

The stimulating, soothing, relaxing or exciting effect of color is being utilized in many practical ways, such as the regulation of road traffic at intersections, guiding trains at railroad crossings, patrolling the air- and water-ways. For example, the highly effective value of red, which exerts a strong and immediate impact on man's visual center, has come to signalize danger: Watch out! Stop! The more suffused color of yellow admonishes drivers and pedestrians to slow down. And the relaxing effect of green indicates: No danger ahead, proceed, walk at the green, not in between. Red lights inside a building mark the emergency exit in case of fire. Yellow painted street curbs indicate where parking is forbidden.

Color and Mood

The soothing effect of meadow grass is applied to the walls of operating rooms in modern hospitals, so as to shield the eyes of green-clad surgeons from the glare of strong artificial lights. A combination of green and blue shades, which recreates the restful effect of the wide out-of-doors, covers the walls of convalescent homes to reconcile chronic patients with the necessity of their prolonged confinement. A combination of yellow, peach and pink adorns the interiors of nursery schools and kindergartens, playing up to the impulsive nature of young children. A color scheme of carefully selected hues has proved advantageous in factories and large offices, for it induces a feeling of comfort, which in turn stimulates more satisfactory work performance.

The age-old knowledge of the relation between color-preferences and emotions is put to use by modern psychological researchers. The recent introduction of color into the Rorschach ink-blot test, as well as the role of color in mosaic tests, finger painting and color pyramids, has served to reveal certain characteristics of the people tested and has proven helpful in furnishing pre-diagnostic clues.

Jean Martin Charcot, the father of modern psychiatry, was urged by an art critic to supply scientific evidence for the contention that the "indigo-mania" of the Fauve painters revealed an unbalanced mentality. He was the first physician to study the relation between unbalanced color perception and hysteria or other psycho-pathological disturbances. Subsequently Charcot opened the way for the use of color tests as a help in pin-pointing mental and nervous disorders.

Emotional Meanings of Color

Today many noted psychiatrists, psycho-therapists, and psycho-analysts make use of color-testing and are agreed about the general diagnostic value of these tests. A strong preference for red, for instance, is taken to indicate the presence of repressed aggressive impulses and uncontrolled sex drives. In the case of manic patients a conclusive preference for

"To wave a red flag in front of a bull" is one of the commonest expressions which reveal the emotional meaning of color.

The bull is not the only creature who is excited by the color red. Man, too, responds in different ways to different colors as the emotional color wheel above shows.

From earliest times man has sought to expand the color scheme of nature by the color world of art. Greek statues were decorated with color (though we now see them unadorned) and much of our knowledge of early peoples comes to us through such artifacts as this chinese bronze ritual vessel from the late Chou dynasty (480 BC).

METROPOLITAN MUSEUM OF ART

Color gives life to the forms of art. The black and white reproduction of this Indian painting *(left)* is vastly enhanced in the color print above.

Symbolism of Color *(continued)*

red is regarded as a sign of a dangerous inner turmoil. Partiality for yellow is said to signify a tendency towards morbid insanity. A craving for green, among victims of anxiety attacks, is believed to reveal the need for an escape mechanism. A sustained liking of blue, again signifies a readiness to control emotions by way of inward integration. Finally, the sweeping rejection of all colors, as such, is taken as a sign of deep-seated psychopathic disturbance, such as schizophrenia.

Therapeutic Use of Color

Hand in hand with the use of color in diagnosing mental disturbances, goes an attempt to tap the remedial quality of color for psycho-therapy. The aim here is not only to restore a normal color-balance, but also to utilize the therapeutic effect of colors for the purpose of speeding up a patient's recovery. It has been found that certain colors can be used as tranquilizers, while others work as stimulants. In cases of deep depression good results have been accomplished by subjecting the patient to "color shock therapy" which consists of sudden color changes, such as an abrupt switch from the cool shades of blue to the hot hues of red and orange. One of the latest gadgets in color therapy is the *chromaton*, a color organ, which is also helpful as a diagnostic tool.

It is, however, not only the psyche but also the body which reacts to color. The physical equilibrium, the pulse rate, heart beat, respiration and even digestion are believed to be effected by colors. The realization of the hypnotic effect of certain colors or their combination has recently prompted an outstanding American dentist, Dr. Ralph Brodsky, to substitute color auto-hypnosis for more conventional anaesthetic agents.

Color in Modern Marketing

Perhaps the most spectacular practical use of color appeal is being made in the field of merchandising. Today there is hardly any manufacturer who would not attempt to increase

the sale of his product by a deft application of color merchandising and packaging. Since advertising is the soul and heart of modern salesmanship, it goes without saying that the front brigade of industrial "color schemers" is made up of ad-men and promoters. Manufacturers and advertising agencies are well aware of the effectiveness of cleverly designed color trade-marks. Colored ads and photos of multi-colored objects capture the eye as well as the imagination

An army of modern scientists, color engineers, sociologists and psychologists, equipped with the latest research devices and computers, is eagerly at work to supply the color-strategists with new and powerful data on the conscious as well as unconscious color susceptibility of man.

The automobile manufacturers of the United States have evolved a specific color map. It divides the country into seven geographical color zones and indicates a preference for more conservative colors in the East and brighter body hues out West.

The fast changing color trends which reflect the accelerated pace of modern life, necessitate agility and inventiveness on the part of the color experts. The creation of new and appealing shades, the presentation of daring or subtle color combinations, is only part of the effort. For example, colorless diamonds are now transformed into blue or green stones by placing them in atomic piles with energies of up to two million electron volts.

Color Semantics

The development of color names has become a profession in itself. It is interesting to note that linguists who have studied the color vocabulary of the Kaffirs, (a primitive Bantu tribe in Africa) were amazed to discover more than twenty-six expressions to distinguish the color and markings of horned cattle. Scholars of literature – whose literary color count goes back to the Rig Veda and to Homer's epics and extends via Rimbaud to the present day beat-poets – have marveled at the discovery that the works of certain poets boast more than a hundred different color phrases. Yet this is picayune compared to the profusion of names and descriptions for a single hue projected by a modern manufacturer of cosmetics. It surpasses not only in numbers but also in sheer inventiveness anything literature throughout the ages has had to offer.

Commercial color imagination competes with the boldest literary color symbols – Shakespeare's "Cain-colored," "orange-tawny," "scarlet sin" . . . Milton's "celestial red, love's proper hue". . . Scott's "chrysolite and glaucose". . . Pope's "sallow, a-dust, livid and swarthy" . . . Keats' "verdant, jetty and ebony" shades . . . Shelley's "amethystine" and "dawn tint". . . Byron's "blue of an empurpled night". . . and the "purple-hectic" of the Romantics. Industrial color creators give not an inch even to such color addicts as Rimbaud and Oscar Wilde, who created terms like "opal dawn". . ."rosy tears". . ."guinea-gold". . ."ashen-florid" (Rimbaud). . ."nacre-coloured air". . ."apricot-colored light". . ."crocus coloured robes" (Wilde).

(please turn)

The vase is beautiful in its classical form and dimensions *(left)* but the addition of color *(right)* evokes a response which is immediate.

The commercial importance of color to the fashion world is revealed in the above photograph which shows the extent of the research which goes into creating new colors for the man-made fibers. A new dye-solvent carrier, developed by American Cyanamid, is shown on the right. It makes possible brighter, heavier shades due to the strong attachment between a polyester fiber and the dye. Contrast this with a dye-precipitant carrier *(left)* which builds up around the fiber.

Symbolism of Color *(Continued)*

Today textile manufacturers easily match the colorful description of a dress by a Chinese courtesan of the Liang Dynasty, who wrote:

"My skirt is cut out of peacock silk,
Red and green shine together, they are also opposed.
It dazzles like the gold-checkered skin of the scaly dragon.
Clearly so odd and lovely a thing must be admired."

Color and Cosmetics

When you consider that lipsticks are after all merely various shades of red, the inventiveness of the cosmetic manufacturers rivals that of the most accomplished poets. We are somewhat awed when we scan the year's crop of lipstick names, which includes such gems as "Fire and Ice". . ."Cherries in the Snow". . ."Pink Cameon". . ."Love that Red". . . "Sugar Plum". . ."Pink Cameo". . ."Orange Blaze". . ."Eve's Apple". . ."Coral Touch". . ."Cute Tomato". . ."Ginger tea" "Flamingo red" . . ."Strike me pink" . . ."Blushing" . . ."French Toast". . ."Sunset Orange". . ."Magnet Red". . ."Misty Coral" . . ."Pink Lightening". . ."Orange Sherbet". . ."Cherries a la Mode". . ."Pinkissimo". . ."Flamboyant". . ."Bright Poppy". . . "Red Flare". . . and many more.

Color Symbols in Ancient Societies

Scarcely anything can illuminate the drastically changed contemporary role of colors more clearly than a short flash-back into the past.

Modern philosophers like Alfred North Whitehead, Ernst Cassirer and Suzanne Langer have reminded us of the old truth that symbols are, so to speak, the throbbing heart of all human experience. The whole process of language itself is based on linguistic symbolization, which makes symbols the prior figures of speech. Symbols create the first intimate conceptional contact between man and his environment. They bridge the gap between the particular and the universal, between the visual and knowable aspects of appearance and the world beyond, which is concealed from our eyes and lies beyond the grasp of our feeble understanding. The native soil of symbols and metaphors lies in the realm of mythology, saga, religion, ritual, poetry and the arts.

A study of the earliest myths and creeds reveals that man has connected his deities from the very beginning with the source of light which illuminated the earth and dispelled the formless darkness, the chaos of the primordial night. This applies to such ancient cultures as the Indian, Chinese, Mesopotamian, Persian, Mayan, Aztec as well as to the sagas of the Norsemen and the Druids. It also holds true for contemporary African myth of the primitive Makalan tribe, whose members carry the sign of "the great giver of light" tattooed on their bodies.

Deification of Color

The manifold colors of the chromatic and of the achromatic scale, which light throws on the huge canvas of earth and sky, were regarded as emanations of a divine force, to which man responded in the vernacular of his own color vocabulary, attributing specific colors or color schemes to his deities. Consequently, color symbols are among the earliest symbols devised by men. According to the diversity of races, creeds and cultures, deities have not only attained prominence under many different names, but one and the same God may represent various, and even contradictory aspects. Therefore his color attributes may likewise have different and contradictory connotations.

Yellow — a Sacred Color

Among all the sacred colors, yellow —"the golden token" — ranks highest. It was regarded the supreme hue in most ancient religions of the East, where the sun rises and where the light dawns — in Hinduism, Taoism, Buddhism, and Confucionism. It was sacred to Brahma, the Supreme Being and Divine Principle in Hinduism, and to Buddha, the "Enlightened One." In China it was the attribute of the "Yellow Emperor," the only one among "the Seven Immortals" who was reborn in the shape of the aged sage Lao-Tzu, the sage of all sages. His pupil, Confucius, likewise gave preference to the yellow color. In Greek mythology "yellow-haired" Helios emerges from the waves, wrapped in a brilliant yellow robe. Both the "flashing-eyed maiden" Pallas Athena, the virgin goddess of wisdom, and her Roman counterpart, Minerva, chose yellow as their favorite color, as did the Egyptian god Neith.

Blue — Symbol of Truth

Blue was generally associated with the clear sky, the realm of the Lord. It was the attribute of the Hebrew's God Jahwe, and of the Norsemen's God Odin, the "heavenly huntsman" who chased through Valhalla clad in a blue coat and cap. It was also the color of the Greco-Roman goddess of the hunt, Artemis-Diana, and of the Egyptian deity Amon, ruler over life and God of fertility. As the symbol of truth and justice, blue adorned the breastplates of the Egyptian priests to attest their holiness and among the Hindus the unchangeable blue of the Indigo flower symbolized man's loyalty to God.

Red — Color of Sun and Sin

Other colors, such as red and green, were used as religious symbols. "Rohita," the word for "red" in the *Avesta,* was also the name of the Sun God. According to *Atharvaveda,* red was the color of the Hindu moon-gods, Soma-Rohiti, the "red seer of the sky," and of his wife Rohitin. It was likewise the attribute of the Egyptian God Shuh, who separated the earth from the sky, and of Aztec deities for whom it signified growth in strength and energy.

During Zarathustra's time, the Iranian solar god of life, a youthful and virile figure, rose in a red robe from his bed of rocks to fight the powers of darkness. And red-robed was Hammurabi's god Marduk, who personified the divine strength which resides in the sun. The Egyptians worshiped the "red" Horus, divine avenger of the suffering Osiris. In India, red was considered the sacred color of Lakshmi, the goddess of beauty, wealth and good fortune, whose union with Vishna resulted in the birth of Kama, the god of love. Apollo wore red pigment in his garments, and Ceres, Dionysos, Satyrs, Silenes and Bacchantes showed a preference for red.

In the Christian faith the color red has contradictory connotations. On the one hand it stands for divine love and the supreme blood sacrifice. It is therefore the sacred color

worn during holy rituals. Scarlet vestments adorned apostles, evangelists and martyrs during Christian festivals. As an attribute of Christian love, red appears in Dante's *Divine Comedy* as the key color for the four cardinal virtues, the seven wise men and the deeds of the apostles. On the other hand, St. John in the Apocalypse describes "the great whore of Babylon" as robed in transparent veils of scarlet, sitting astride a scarlet beast.

Green — Color of Eternity

Green symbolizes eternity, nature and universal harmony. It was the chosen color of Osiris, the father of the Egyptian Triad, also of Isis and her emerald clad priests. The Egyptians conceived of time as "the everlasting green," the Druids considered it a sacred color, and Mohammed pronounced it "the color of colors" and promised the faithful followers of Allah that they would wear bracelets of gold and green garments of fine silk during their blissful sojourn in the heavens.

The tablet of law which Moses received from the hands of God was said to have been made of divine sapphire. Emerald green was the Holy Grail, and smaragdine was the famous tablet of Hermes Trimegistos, which proclaims the exact correspondence of that "which is below with that which is above" – a statement which formed the basis of gnostic teachings and the "royal art" of alchemy.

White — Color of Purity

White, the color of uncorrupted light, is the symbol of purity. It was the chosen color of the Hindu god Vishnu, the preserver of life, and of his wife Saraswati, the Hindu goddess of Wisdom. Hebrew priests wore white vestments on the Day of Atonement as a sign that God had blotted out the sins of his children.

Black — Color of Evil

Black, the burial ground of light (which absorbs all color) was an attribute of Shiva, the Indian God of destruction and of his wives Paruhati, and Kali. Kali is depicted in stark black nudity, wearing only a garland of skulls, standing triumphantly on Shiva's body. The black god Seth, was the Egyptian deity of evil, the adversary of Osiris and Horus. And the devils and demons are usually pitch black. The darkest of all colors, however, was made radiant the day when "Our Lady of Guadelupe" appeared to a poor and humble Indian on the hill of Tepeyac, revealing herself as "the dark Madonna."

Multi-Colors of India

However the gods were not confined to monochrome color symbols. The Indian god Varuna, omniscient ruler of man and the universe, wore a golden robe in the morning and a dark garment at night. The star-studded celestial cloak of Isis was many-colored, and so were the costumes of Cleopatra who proclaimed herself "the new Isis."

The Hindus employed many colors to court favor with their gods. On the day of the full moon in February and March, when they celebrate the advent of spring, they held a festival under the auspices of Krishna, the youthful and ardent lover of Radha, and of Kama, the god of erotic pleasure, whose two wives, Trisha and Rati, personify passionate and satisfied desire. This feast, called the "holi," assumed the form of Bacchanalia and was celebrated in a riot of colors. Women, "playing holi," sprinkled colored water and powders on each other and on the males of their choice. They prepared multicolored food which was as much a treat for the eyes as it was for the palate. No less colorful were the ceremonies performed during the "Anthesteria," or Festival of Flowers, in ancient Greece.

Black, which absorbs all colors, can be a symbol of great strength and dignity as in this noble head from Iraq.

Color in the Bible

Many important events in the Book of Books are fraught with color. When, after the Deluge, a fresh start was made, the colors of the rainbow were taken as a sign of the covenant for the new order between God and men. The day God spoke to Moses on Mt. Sinai he specified the offerings he expected from the children of Israel. Aside from gold, silver and brass he asked for blue, purple and scarlet silk and for red-dyed ram's skin. He prescribed that the Tabernacle in the Wilderness be adorned with curtains and door hangings which would match the color scheme of the stones of the four rows of seats that were to be fashioned of rubies, sapphires, topaz, emeralds, agathe, amethyst, beryl and jasper marble.

It is true that we find only one single color reference in the Gospels, a description of the blue linen garment worn by the rich man in the parable of Lazarus. But St. John makes up for it in the Revelations where he speaks of the white, the black, the red and the pale horses of the Apocalypse and describes in dazzling detail the multi-colored splendor of the heavenly city.

Color and Ritual

In different cultures colors symbolized both order and disorder in the universe. In Confucian China, four primary colors stood for the four corners of the earth – black for North, red for South, green for East, and white for West. Five colors represented the five elements, the five types of happiness, the five vices and the five principles of faith. In Greece as well as in Ireland four colors were assigned to the four elements, and the "Cosmic Tree" was guarded constantly by four differently colored gods who faced in the four directions of the wind.

In Quetzalcoatl, the ancient Mexican City of the Sun named in honor of the Lord of the High Heavens, four radiant colors composed the temple palace of the god. The rooms facing East were decorated in gold, those facing West in blue with turquoise and jade; the rooms with a Southern exposure were white, and the Northern rooms red. Every night at midnight the king-priest and Lord would descend into the river and after having divested himself of his golden turkas he would take his midnight dip amidst red-colored blossoms in the river known as "the painted Vase."

The forbidden city of Peking and the Mexican temples were monuments of colorful architecture, which is also true for the buildings in Sumerian and Babylonian cities, whose inhabitants subscribed to the seven-stellar myth. Consequently, seven colors attributed to the seven planets dominated the ancient Sumerian "Ziggurat," the "Mountain of God," the Tower of Babel and the great temple of Nebuchadnezzar at Barsippa. *(please turn)*

Symbolism of Color

Color as Social Status

In ancient times colors also served to reflect social status in the hierarchy among men. During state functions the Chinese emperors, the "sons of heaven," wore red silken state robes embroidered with metallic threads and decorated with five phoenixes enclosed in a circle of happiness which in turn was bordered by green, purple, white and black designs. When the emperor worshipped the sky he was clad in a blue robe, and when he gave thanks for the natural order of the universe, he wore a yellow gown.

Color was a distinct mark of higher or lower rank among Chinese officials. In Chinese culture, the art of poetry ranked so high that any major official, such as the mayor of a town or the governor of a province, was required to take an examination in poetry. When passed, this conferred on him the degree of "flowering talent," roughly equivalent to our B.A.

The holders of this degree were permitted to wear a gown of blue silk, while lower officials had to content themselves will "lesser green robes." It was therefore easy to tell the rank of a Chinese official at first glance by the color of his dress, his buttons and his vehicle.

Brown was generally regarded as a "lowly color," reserved for peasants and other men of minor distinction. To this day the peasants in India are known as "Men in Khaki." The "four Varna" (which means four colors in Sanskrit) identified the four original castes in India. Holy men wore white, soldiers red, merchants yellow and the unfortunate Sudras, black.

The kings of the valley of the Nile (which, according to Egyptian cosmology, was divided into two lands) wore a high white crown and resided in a "White House" when their domain was Upper Egypt. Those who ruled over Lower Egypt wore a flat red crown and made their residence in the "Red House."

In Rome, where the Caesar was a personification of Jupiter, divine purple was the traditional color of the Imperial robe. And since time immemorial colors have been used to identify royal insignia, heraldic emblems, knightly distinction, coats of arms, flags and banners.

Color Magic in Folklore

Color also served magic and mantic purposes. The trinity of blue, yellow and red symbolized the triad of the three great Sephirot of the Kabbala. In Greece the magic power of color was invoked to work love charms. The favorite color scheme for this purpose was a combination of purple, blue, black and white. In Mongolia the bride's face was covered with a red silk cloth when she was handed over to the bridegroom because it was thought that this would increase his nuptial potency.

In Egypt, where incest was a usual practice among royalty, a Pharaoh, eager to take possession of his mother, would transform himself into a many-colored bull. And in an incestuous fairy tale by Grimm the price which Princess Allerleirauh asks from her father, who seeks her hand in marriage, consists of a multi-colored cosmic dress which would reflect all the hues of the universe.

Color-magic was believed to impart wisdom, to arouse love, to insure the fidelity of one's spouse. It was also applied to ward off evil demons and wicked spells. So we are told in the folklore of various nations that the waving of a tri-colored scarf is the best protection against evil spirits.

The firm belief in the magical power of colors extended beyond the aspects of life on earth to the realm of after-life. The Egyptians insisted on painting the ceilings of their tombs green, and the floors green-blue like the meadow-grass in the fertile valley of the Nile. They also placed multi-colored amulettes in the tombs of the deceased to promote their blissful journey into eternity and to assure their happy and healthy after-life.

Modern Color Symbolism and Folklore

Some of the mystical, sacred, magic and mantic color symbolism has survived in present day coloquial expressions and slang. In certain instances the original connotation of a color has been retained; more frequently it has been changed, at times to a diametrically opposite meaning.

Yellow, the symbol for the Supreme Divine Being, for instance, stands today generally for all that is considered despicable; for cowardice, jealousy, and immoral pleasures which Maeterlinck called "the yellow dogs of my sins."

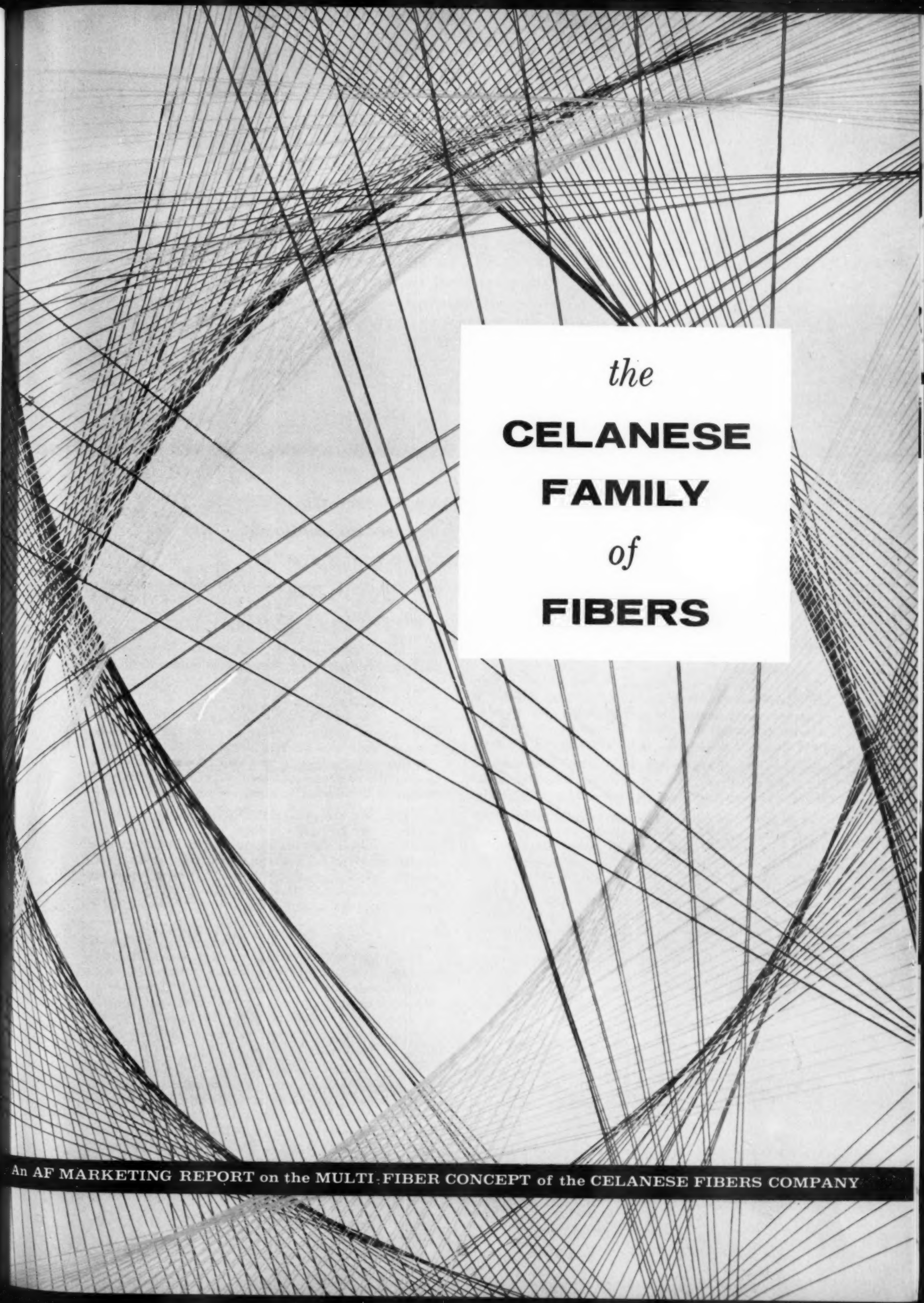
What was once called "the heavenly hue of blue" had already lost much of its celestial glamor when Goethe referred to it as "a charming nothing." Today blue is a symbol of frustration and inefficiency. We are "feeling blue" on a "blue Monday" which may follow a week-end during which we have been "in the pink." In French, day-dreaming is called "voyager dans le bleu," likewise the German day-dreamer is "travelling into the blue." The vocal expression of sadness in music is found in the Blues, and "blue is the boredom of the heart." In addition we have the "blue laws," remnants from Puritan restrictive legislation, the "literature bleu," which carefully avoids any allusions to sensual pleasure, and "the blue stocking," whose erudition is gained at the price of foregoing female charms.

Green, once the color of hope and eternity, has come to signify immaturity – the "greenhorn" and malice "green with envy." The two achromatic colors, black and white, have preserved most of their ancient symbolic connotations. Black still stands for wickedness – a black character, black-mail, black list, blackbook. On the political scene the dreaded "Black Reichswehr" was the pacemaker for Hitler's rule and Mussolini's blackshirts were the shock troops of Fascism.

The immaterial color of white continues to stand for the immaculate and uncorrupted. Even the "white lie" has a halo of innocence. The hoisting of a white flag signifies peaceful intentions.

The ambiguous color red has remained a symbol of carnal love. Ever since the days of the "red Jezebel" members of the "oldest profession" are relegated to ply their trade in "red light districts." We speak of "scarlet prose," of "scarlet desire," and a fallen woman in Puritan times was marked by the sign of shame, the scarlet letter. Red also stands for one of the main curses in modern times – red tape. In politics it refers to radicalism of a greater or smaller degree. A "red" is a communist, a "pink" merely a fellow traveler. Pink is also associated with a lack of realism, i.e. a Pollyanna who looks at the world through rose-colored glasses. We "see red" when we are angry, we "smell a red herring" when something seems fishy, and the only pleasant associations with red are "red letter days."

The story of color is a never-ending source of fascination. The more we know of its ramifications and its meanings, the more effectively we can use it in the day-to-day work of creating beautiful textiles. American Fabrics Magazine will continue to explore this fruitful subject in future issues, as it has in the past. The more we ourselves learn about color, the more we are led to believe that it is not only the single most important force in fashion, but is also the most significant symbol of our times – The Editors.



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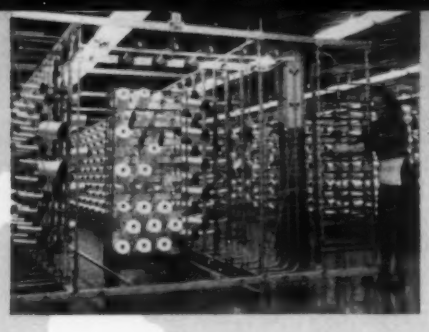
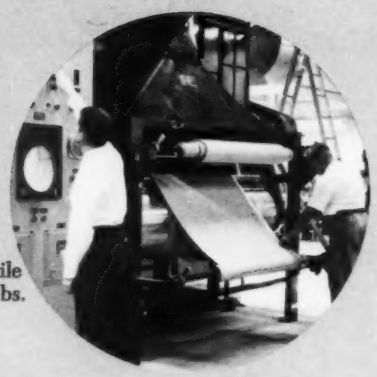
CELANESE FAMILY *of* FIBERS

An AF MARKETING REPORT on the MULTI-FIBER CONCEPT of the CELANESE FIBERS COMPANY

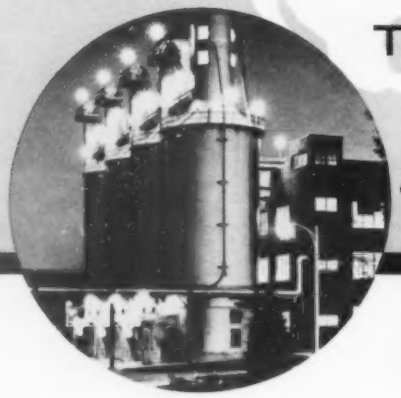


Creeling of Celanese yarn.



Full scale textile development labs.

The MULTI-FIBER CONCEPT and the T



Celanese units operate round-the-clock for fiber production.

To answer the world's increasing appetite for specialized textiles, Celanese has engineered a well-balanced and versatile family of fibers, each designed to perform a particular function in the world of today.

CELANESE FIBERS COMPANY, a division of Celanese Corporation of America, is internationally known as the world's largest producer of acetate fiber and yarn. Less well known is the fact that Celanese also produces many other types of man-made fiber and yarn – each one carefully engineered to meet the needs of particular markets and special end uses.

Essentially, this is what is meant by the multi-fiber concept but it also has deeper implications which involve the whole fabric of modern textile science and world economics.

The growth and expansion of Celanese did not happen overnight, yet the major new developments have all taken place within the past ten years and they reflect the pattern of rapid change which has marked the surging progress of the man-made fiber industry.

In the last analysis, this vast expansion is based on the multi-fiber concept. It is this approach to modern textiles and this faith in their future which has prompted management to make such huge investments in the research, development and marketing of new fibers. It is an approach which has been carefully thought out and articulated on the top management levels of Celanese.

Design for End Use

The multi-fiber concept means exactly what it says – different fibers engineered for different end uses. Though we now take it for granted, this is literally a modern miracle and has been made possible by the brilliant entrance of chemistry into the textile field. Scientific inventiveness has now made it practical to research and develop a fiber from scratch in response to the needs of particular industries and particular end products – in the same way as it has long been possible to design an engine to perform a pre-determined function.

This concept sounds simple and obvious yet it represents a revolution in our approach to the production and the uses of textiles. As long as the textile industry had only natural fibers to work with, it depended on fabric construction and finish to meet the differing needs of different markets. Working with the fibers at its disposal it therefore logically developed a multitude of different constructions and finishes adapted to different end uses.

But chemistry changed all this. Today textile production begins in the laboratory – rather than in the field. It is in the laboratory that the fiber is conceived, designed and engineered to fit pre-determined end uses. Naturally, the construction of the finished cloth still plays an important role but it is the man-made fiber which today occupies the center of the stage.

Consumer Education and World Needs

Hand in hand with the rapid growth and development of man-made fibers we have seen promotional efforts never before equalled in the long history of textiles. Consumers – as well as the trade – have become educated, as never before, to the performance qualities of fiber and fabric. They have been trained, as never before, to demand performance and to expect that the fibers and the fabrics they buy will be *specialized,* engineered to rigid standards of easy performance.

On another level and at the same time, the world appetite for fibers has increased tremendously not only because of population growth but also because of the rising standard of living which is developing everywhere. Natural fibers are already hard put to supply all the world's growing needs and

Fabrics for the young market.

Specialized fabrics for the fashion industry.

TEXTILES of our MODERN WORLD

Quality control protects the consumer.

the specialized fibers developed by chemistry have lustily moved in to fill the gap.

This expanding need for textiles and this public education to specialized performance is the rationale behind the multi-fiber approach as it has been developed at Celanese.

Celanese a Pioneer in Man-Made Fibers

In expanding its range of fibers Celanese was able to draw on its long experience as a pioneer in man-made fibers. It is now more than 40 years since Camille and Henry Dreyfus – founders of Celanese – developed the acetate fiber process. Acetate is the second oldest and the second highest in volume of all man-made fibers. But it is no longer the sole prop on which the company's fame and volume rests.

A Family of Contemporary Fibers

Over the years, Celanese has developed other man-made fibers and yarns to round out its product line. These products now include the following:

FORTISAN RAYON. This was the first addition to the Celanese family of contemporary fibers. It is a superfine filament rayon yarn of great strength and beauty. Originally it was used for parachute cloth but its stability and its adaptability to sheer fabrics has made it widely accepted for curtains and draperies.

CELAPERM. The next development was the color-pigmented or solution-dyed acetate yarn, *Celaperm*. Its wide range of colors, its unsurpassed fade resistance and its absolute uniformity of shading have gained for Celaperm acetate a broad range of uses not only in the fashion field but also in curtains and draperies.

ARNEL. In 1954, Celanese launched its *Arnel* triacetate fiber. It established a broad market coverage more quickly than any other new fiber in modern textile history. For women's apparel and lingerie, for men's sport shirts and slacks, for children's garments, and for both woven and knitted constructions, *Arnel's* washability, permanent pleating, and ability to resist wrinkles have given it a secure place in the textile market.

RAYON. Celanese is not a big factor in the rayon business but produces a limited amount of filament and staple yarns for apparel, home furnishings and industrial end uses.

TYPE-F ACETATE. This is a new acetate filament with a modified cross-section specially developed to give added luxury and body to drapery fabrics.

ACETATE TOW. A large number of continuous filaments in rope form prepared for subsequent cutting into staple fiber for many end-uses including cigarette filters, special insulation and industrial filtration.

CELAIRE. A new high crimp acetate staple fiber that does heavy duty. Blended with nylon, it lends itself to loop pile or flat woven fabrics of unusual interest. Its durability, abrasion resistance and dimensional stability make it an upholstery or slip cover fabric that cannot be out-done. Celaire acetate takes clear colors and holds them – it resists fading and soiling, can be spot cleaned and shampooed repeatedly.

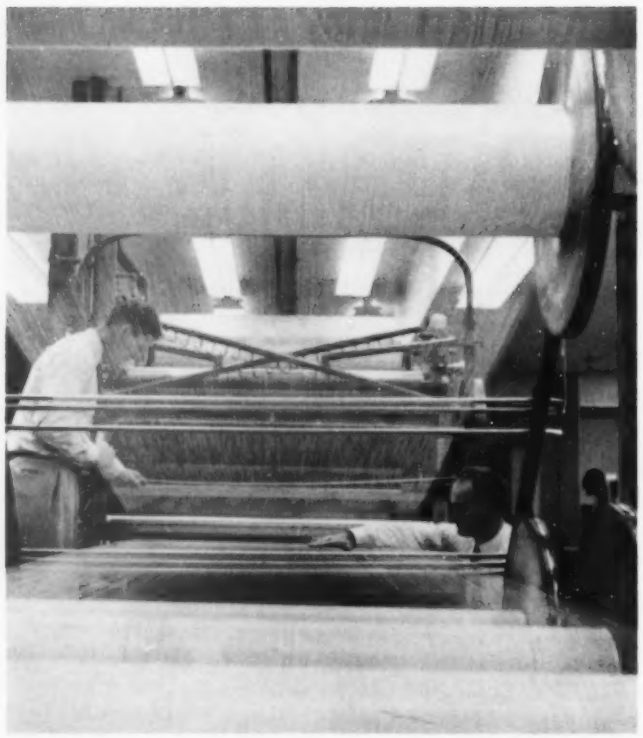
CELACLOUD. This is a pure white crimped acetate staple fiber specially engineered for batting purposes. It is lightweight, resilient and non-allergenic. It dries quickly, holds its shape, resists moths and mildew. Celacloud acetate is used in such products as mattresses, sleeping bags, upholstered furniture and as batting for quilted clothing.

(please turn)

TRADEMARKS OF CELANESE ARE:
CELANESE® ARNEL® FORTISAN® CELAFIL® CELAPERM®
TYPE F® CELAIRE® CELACLOUD™ CELALOFT® DARVAN®.
FORTREL IS A TRADEMARK OF FIBERS INDUSTRIES, INC.

55% cotton/45% acetate brocade with oriental motif. For cocktail dresses and throw pillows, etc. *Beckendorf Bros.*

60% Arnel blended with 40% cotton in a yarn-dyed mesh stitch knit for the sportswear field. *Wm. Simpson Sons.*



Celanese Fiber and Yarn Processing staff members at the Charlotte (N.C.) Development Laboratories work with plant-type machines which permit research experiments with regular production equipment. Yarn lubricant and sizing experiments are made on this 8-can Cocker Slasher.

FASHION PLAY BACK

One of the important services Celanese offers to mills and converters is the actual styling of fabrics which use Celanese fibers. The basic styling work begins as much as a year and a half in advance of the seasons. By collecting foreign samples and trend information and by correlating this material with current market data Celanese has been able to develop a suggested range of fabrics which they can offer to their customers well ahead of the season. Their realistic approach to advance styling has resulted in many successful yardage fabrics for Celanese customers.

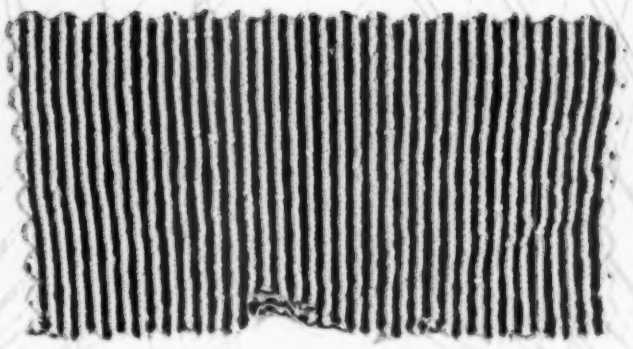
A Family of Fibers for the apparel, home furnishings and industrial fields.

CELAFIL. A crimped acetate staple fiber designed specifically for use in pillows and comforters. It is pure white in color, has great springiness, is lightweight and non-allergenic and resists moths and mildew.

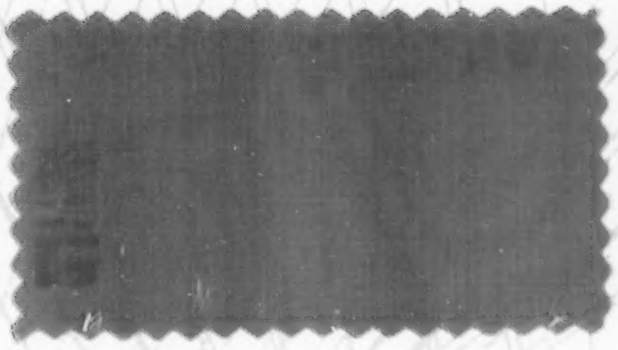
FORTISAN 36. A high strength, heavy denier rayon filament yarn specifically engineered for industrial end uses. Because of its superior quality and its dimensional stability it is used in such applications as knitted radiator hose, oil suction and discharge hose, low stretch tent webbing, V-belts, tarpaulins and tents.

100% Celaperm in a jacquard upholstery fabric with great stability and resistance to fading. *Sunbury Textile Mills.*

100% Darvan in a completely washable knitted apparel fabric with dimensional stability. *Celanese Fibers Company.*



65% Arnel/27% cotton/8% nylon are blended to form a knitted dimensional stripe for apparel. *Princeton Knitting Mills.*

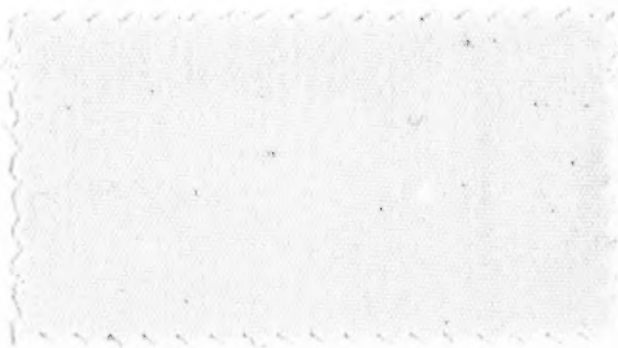


65% Fortrel/35% cotton broadcloth is wash-wear with fine hand. Designed for women's blouses etc. *Folker Fabrics.*

CELALOFT. This is a specially bulked filament acetate yarn. Celaloft acetate gives bulk without weight to drapery and upholstery fabrics. In apparel fabrics it achieves a crisp, worsted-like hand.

DARVAN. This new fiber belongs to the *nytril* category and is unique with Celanese since there are no other fibers in this category. Among the outstanding characteristics of *Darvan* is its soft, luxurious hand which survives washing and wear in either a woven or a knitted fabric. It also has a remarkable capacity for retaining its original shape and dimensions – a quality which makes it highly valued in the sweater field. In this respect it is considered superior to all other fibers commonly used for sweaters. *Darvan nytril* fiber resists pilling and is completely washable.

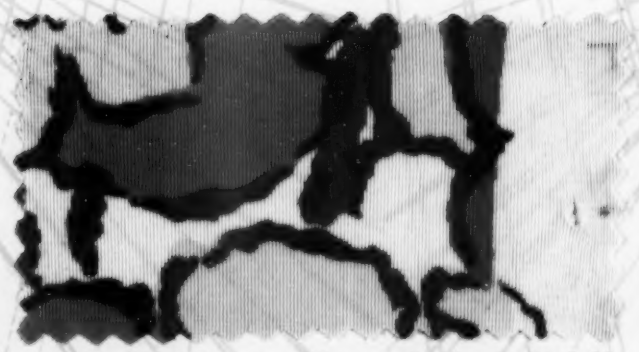
FORTREL. The newest addition to the Celanese family of contemporary fibers is the polyester – *Fortrel.* The Fortrel name is to be used only when the fabric meets performance specifications. The qualities inherent in the polyester group – strength, washability, crease-resistance, durability, capacity for blending – are well-known by now to both trade and consumer. What remains to be said is that *Fortrel* is being produced by Celanese in a joint venture with Imperial Chemical Industries of Great Britain. I.C.I. is the company which first introduced the polyester fiber *(Terylene)* commercially and which owns the basic world patent rights outside the United States. *Fortrel polyester* benefits from the long experience gained by I.C.I. in the polyester field and from its vast technical and engineering resources as a world leader in polyester chemical and fiber production.



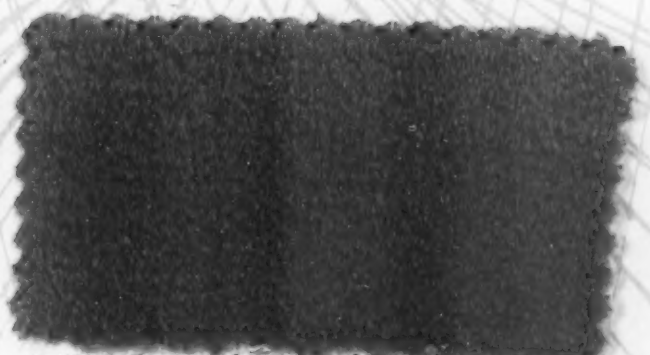
Fortisan-36 blended with cotton produces a tough, durable industrial fabric with many applications. *Wellington Sears.*

100% Fortisan woven into a sheer, silk-like gauze fabric of great strength for window curtains. *Lehman-Connor.*

(Right) Easy-care Arnel in a permanently pleated Cohama jersey dress by Pat Hartly.



100% Arnel shows its ability to take dye in this bold print for the blouse and dress trade. *Robaix Fabrics.*



100% Darvan achieves a soft, luxurious hand in this fabric specially designed for women's coats. *Einiger Mills.*

Celanese puts great stress on quality control.

Acetate/Fortisan in a two-print window treatment.

Paris-born design in Folker's acetate/rayon.

Arnel sharkskin in a Teena Paige dress.

TOTAL MARKETING

For the Celanese Family of Fibers

From basic research to styling, advertising, quality-control and point-of-sale merchandising, the Celanese Total Marketing Plan has been widely acclaimed as a model for the fiber field.

THE ALL-ENCOMPASSING program which Celanese has developed for the marketing of its fibers is one of the most comprehensive and imaginative in the entire textile industry. It is based on a realistic evaluation of the textile field as volatile, as frequently the prey of over-production and irregular profit returns – above all, as highly competitive.

To cope with these factors and to assure growth for its fibers, Celanese has perfected what it calls a "Total Marketing" plan which is geared to providing a unique combination of services and quality control for its customers. Its end objective is to supply the ultimate consumer with interesting and satisfying merchandise.

Broken down into its multiple components, the Celanese Total Marketing plan involves all the following facets:

CUSTOMER SERVICE – a team of textile experts who are prepared to go into any customer's mill or finishing plant and assist him in properly processing the fibers.

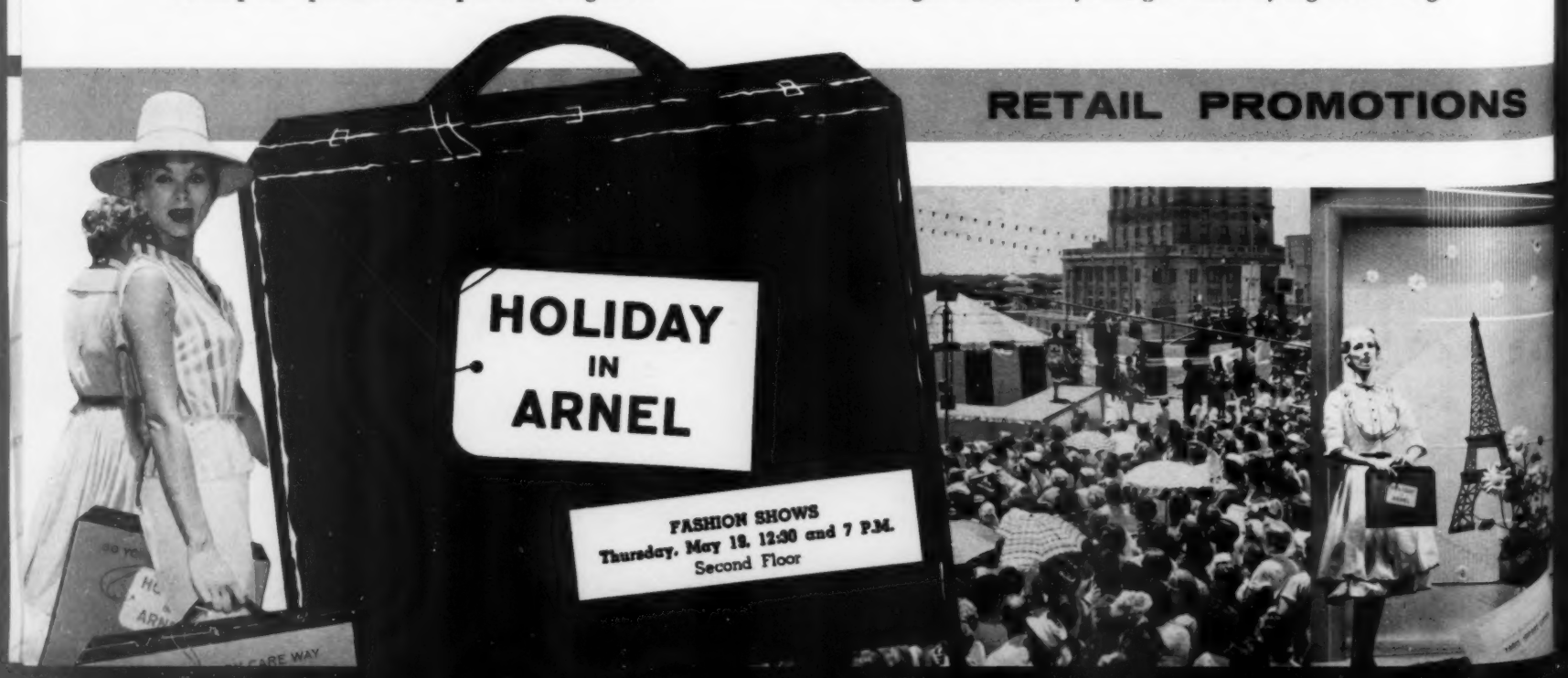
APPLICATION AND PRODUCT DEVELOPMENT – a well equipped textile laboratory, plus a complete range of textile processing equipment, which can help customers develop new products or improve existing ones.

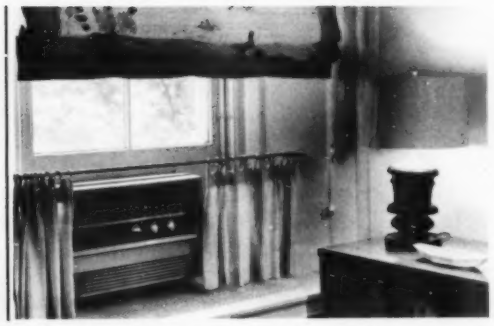
MARKET RESEARCH – a team of market research experts equipped to offer estimates of market conditions, plus consumer surveys on customer products, to assist customers in developing and proving out superior fabrics for consumer use.

FABRIC STYLING AND DEVELOPMENT – a group of fabric and color experts who bring fabric ideas to customers for the purpose of giving them suggestions on products they can make with Celanese yarns. This group makes up many sample fabrics which can be taken over and copied by these mill customers.

MILL COVERAGE – a group of men who call on both the buying and selling offices of Celanese mill customers for the purpose of informing them about the advantages of Celanese yarns, showing them styling ideas, and keeping them informed about the ways Celanese helps create a demand for their fabrics.

CONVERTER COVERAGE – a group of men's wear, women's wear, and home furnishings experts, who call on the converter customers of the mills to sell them on the advantages of Celanese yarns, give them styling ideas using





Celanese promotions in the home furnishings field offer many decorating ideas. Above Bloomcraft's acetate/rayon curtains hide air-conditioning units when not in use.

Celanese fashion advertising is known for its finesse.

Celanese yarns, and merchandising and advertising support on properly styled fabrics containing Celanese yarns.

CUTTER COVERAGE – a group of men's wear, women's wear, and home furnishings experts, who call on garment manufacturers and other end product manufacturers to sell them on the advantages of Celanese yarns, show them interesting fabrics containing Celanese yarns that can be purchased for their lines, and offer merchandising, advertising, sales promotion, identification, or publicity support on properly styled products made from fabrics containing Celanese yarns.

RETAILER COVERAGE – a group of retail experts, located in New York, Boston, Charlotte, Fort Lauderdale, St. Louis, Chicago, Dallas, Los Angeles, and San Francisco. These people call on retail stores to inform them about products containing Celanese yarns, to tie the stores' advertising, promotional, and selling efforts into Celanese national advertising efforts and thereby help the sale of products containing Celanese yarns.

ADVERTISING – placement of trade and consumer advertising to help create a demand for fabrics made from Celanese yarns.

PUBLICITY – a department that calls on the trade and consumer press to feed them a continuous supply of stories and pictures of products containing Celanese yarns.

SALES PROMOTION – a department that creates display, brochure, mailer, and other ideas, and materials that can be used by stores, end-product manufacturers, or converters to increase information about, and desire for, products containing Celanese yarns.

IDENTIFICATION – a department that creates and supplies tags, labels, and other means of identification to end-product manufacturers and converters for the purpose of enabling a consumer to identify products made of Celanese yarns in retail stores.

WOMEN'S CLUB COVERAGE – a department that corresponds with, and develops programs and slide films for, women's organizations to entertain them and make them more aware of the advantages of products containing Celanese yarns.

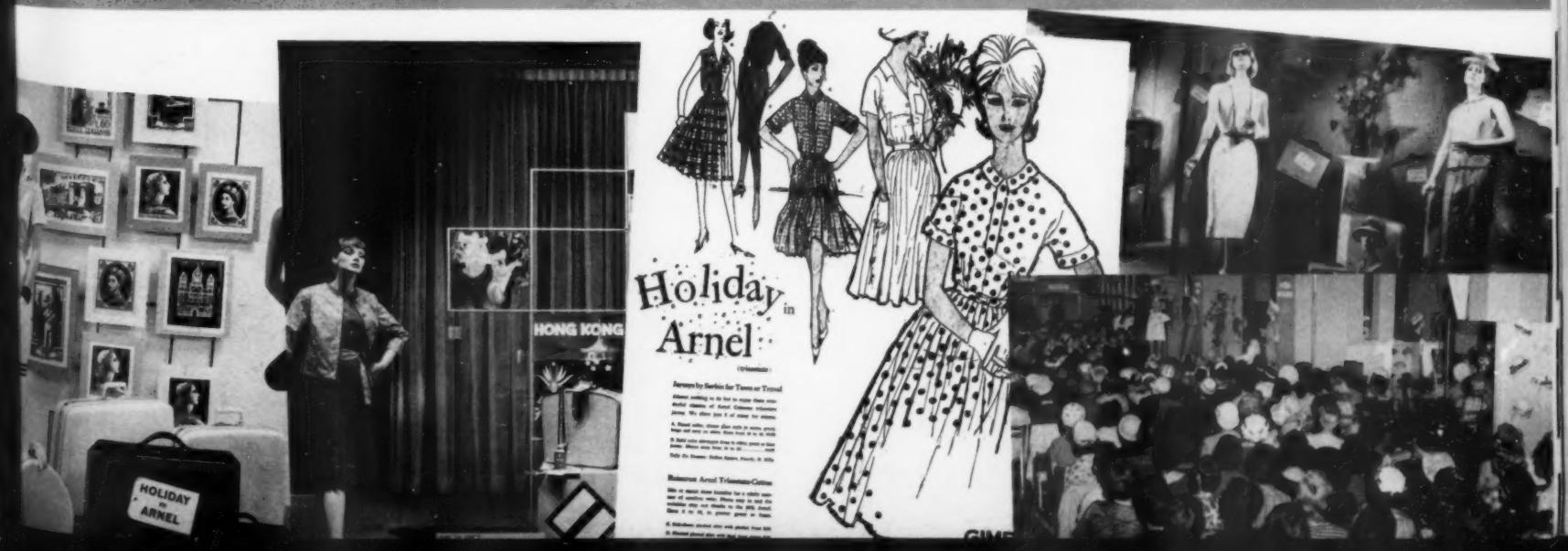
SCHOOL COVERAGE – a department that corresponds with, and develops material for, school classes and audiences to better inform them about the advantages of Celanese yarns.

CONSUMER RELATIONS – a department that operates a fabric and end-product testing program to ensure that the products appearing in Celanese advertising and carrying Celanese identification meet quality standards that will give consumer satisfaction. This department also handles consumer inquiries and offers help to cutters, dry cleaners, and laundries who need advice on how to handle fabrics containing Celanese yarns.

LICENSING DEPARTMENT – a department that operates any licensing programs that are in force on Celanese yarns, including the licensing of finishing plants who process Arnel fabrics. Purpose of the department is to protect the public from receiving poorly made fabrics containing Celanese yarns which would decrease the public's regard for Celanese products.

The over-all purpose of this wide-ranging effort is the creation of ideas, information and enthusiasm at all levels of the marketing chain so that Celanese fibers can more smoothly move through this chain from its plants to satisfied consumers.

Across the Country | Dealer aids | Fashion shows | Window displays | Local advertising



FORTREL — Newest Member *of* *the* Celanese Family *of* Fibers

IN ANNOUNCING its "Total Marketing" program for *Fortrel*, Celanese answered some basic questions – questions which are today on the minds of everyone concerned with textiles. They asked:

"Why any new fiber at this time?"

"Why a polyester fiber?"

Their answers to these questions are basic to the multi-fiber concept. Celanese said:

"We are important producers (and we hope good competitors) in the fiber field. Our present production is substantial and we intend that it shall grow. Despite the rash of new fibers in recent years, we believe the American market and the world market have a long way to go before they are as well-dressed – and as attractively housed – as new fibers and fabrics can make them. Our continuing long range market analysis convinced us some time ago that polyesters as a group, have the greatest utility, and the broadest application of any of the new man-mades. Their few apparent limitations are just the kind of fabric development problems we feel best qualified to solve."

Stanislav V'Soske has an old fashioned view of craftsmanship, a modern approach to design and color.

THE V'SOSKE RUGMAKERS

One of the unique textile enterprises of our day, the house of V'Soske is at once designer, craftsman and production manufacturer, controlling all the processes of rugmaking from wool spinning to the finished product

THERE ARE FEW enterprises in modern society which remind one of the mediaeval craft guild but the firm of V'Soske has exactly that quality. Now over thirty years old, this family business has carved out for itself a unique niche in the commercial world by supplying handicraft rugs and carpeting to many of the most impressive custom installations in America.

The Caribe Hilton, the American Airlines Electra, Saks Fifth Avenue, the Federal Reserve Bank, the Corning Glass building, the Museum of Modern Art, the Walker Art Center and several hundred other showplace buildings across the country are all fitted with V'Soske floor coverings, most of them especially designed and woven to fit the decor and shape of the area they cover.

A Craft Approach to Production

The small design studio of Stanislav V'Soske has now grown into two substantial craft plants – one in Grand Rapids and one in Puerto Rico – but success has not altered the handicraft approach to rug weaving, nor has it changed V'Soske's devotion to wool. The company still makes only wool rugs, still carefully selects the best fleeces from the world's supply, still spins and dyes its own yarns and weaves its rugs to its own exacting standards of craftsmanship.

Stanislav V'Soske is considered the dean of designers in the field of floor coverings. His four brothers – Thaddeus, Casimer, Bronek and Aloyzy – have each become experts in different facets of the rugmaking craft. Together they have created an organization which has become renowned throughout the world and whose products have been exhibited as modern art in some of the country's leading museums.

A Designer's Weaver

When the White House was re-decorated and the famous rug in the Green Room had to be replaced, it was V'Soske who was entrusted with the commission. Stanislav still considers this work the most interesting of his creations but the company is by no means limited to the production of his own designs. Many of the country's leading designers have turned to him with the confidence that every nuance and intricacy of their drawings would be faithfully executed in

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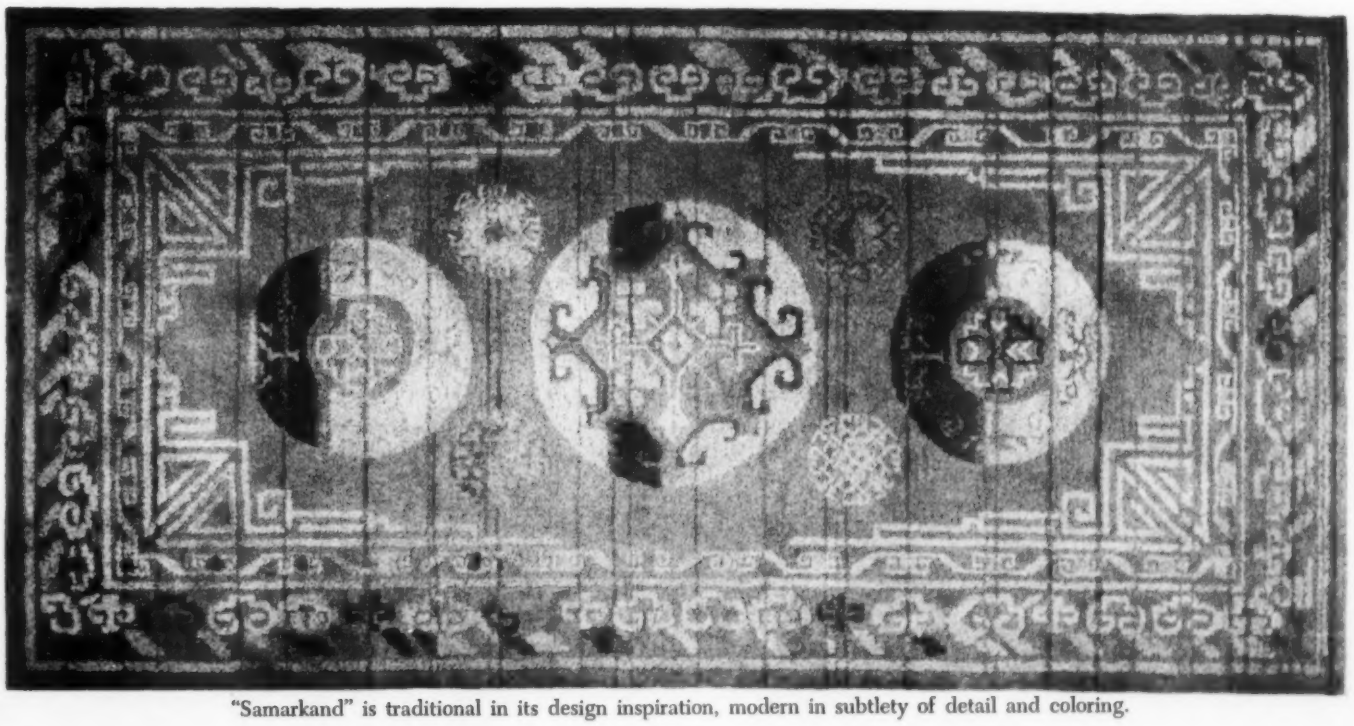
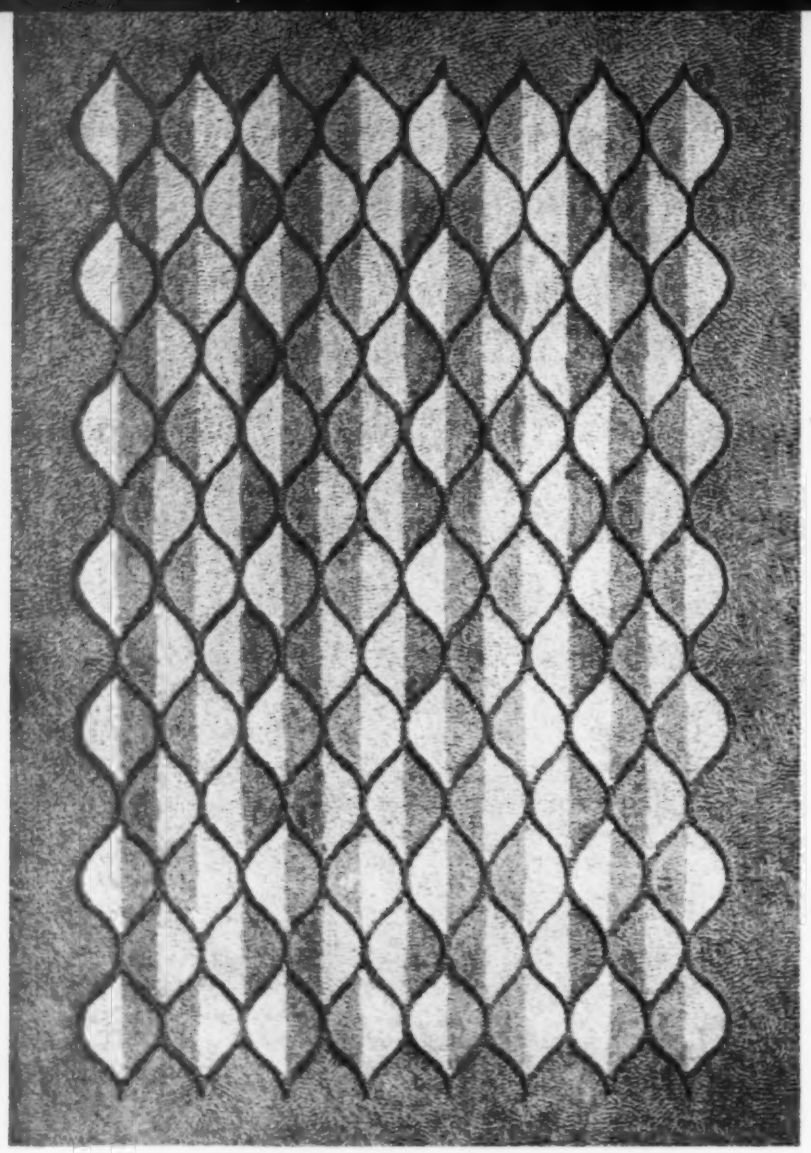
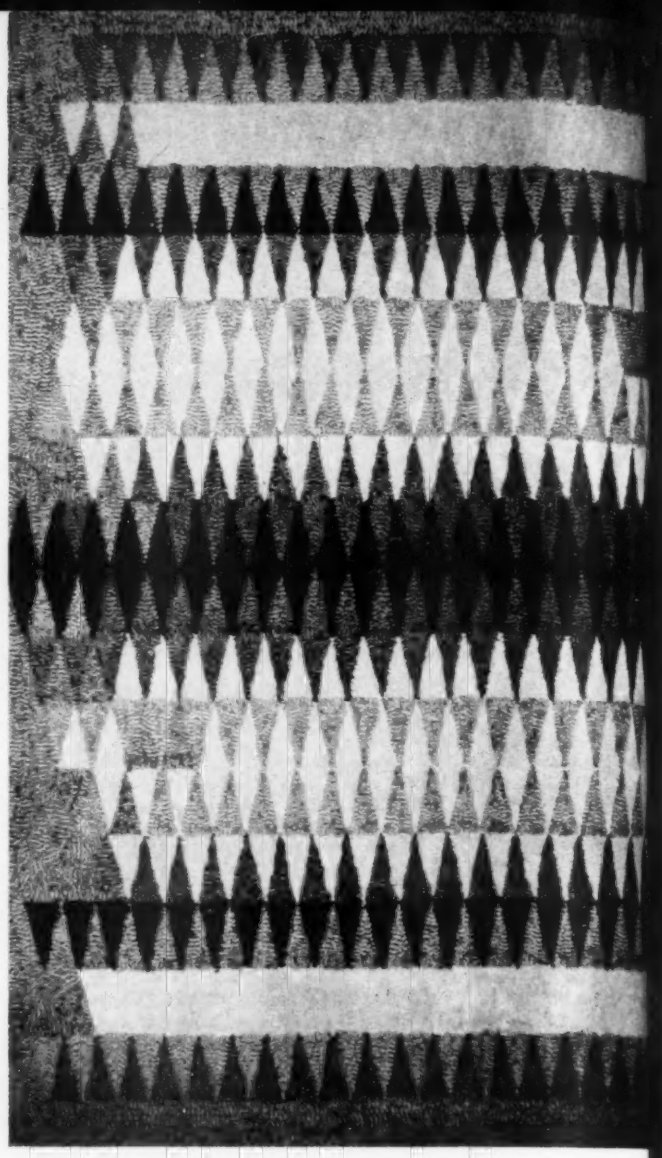


"Samarkand" is traditional in its design inspiration, modern in subtlety of detail and coloring.

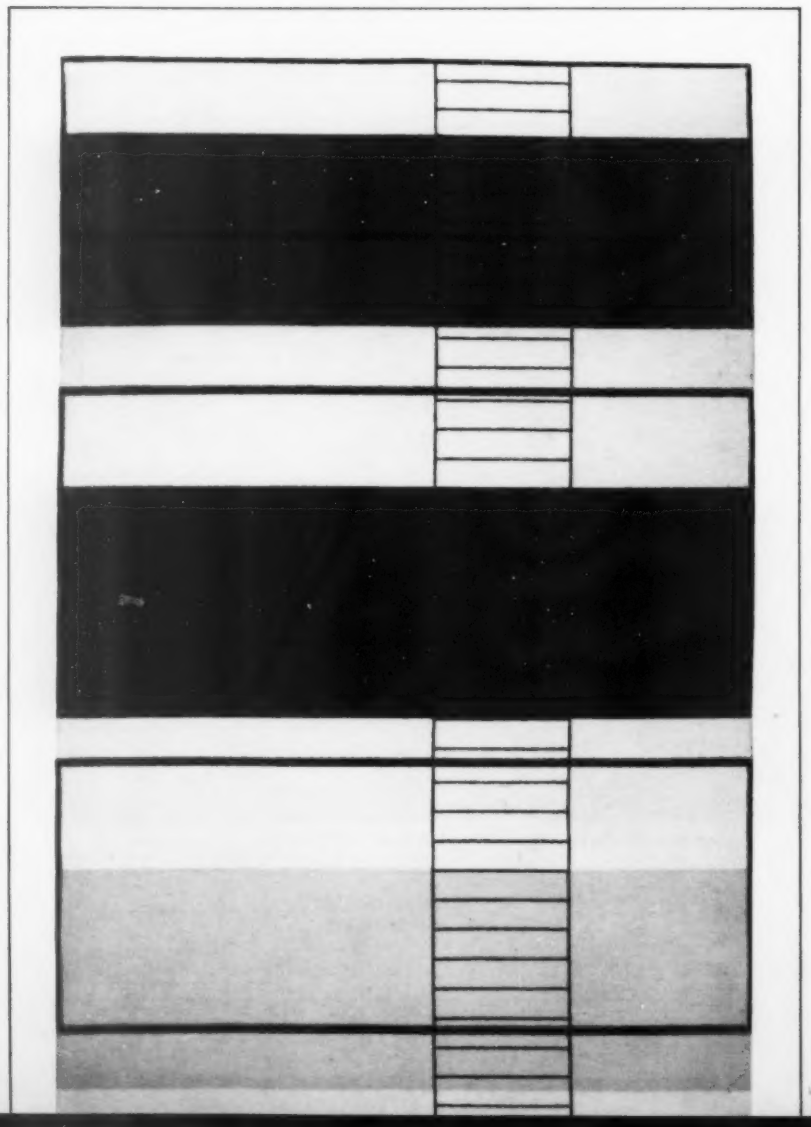


"Mecca," a modern interpretation of an ancient Arabic mosque motif.



"Babylon" gives subtle color variation to a harlequin design

"Testa #3" has the form and coloring of a painting by Piet Mondrian.



"Trout Stream" translates the flowing patterns of water into a

"Turkish Delight" is based on the intricate play of light and shadow seen in filigree stone work of the Near East.

V'SOSKE *(continued)*

a finished rug. Perhaps the most spectacular demonstration of V'Soske versatility and craftsmanship was the series of rugs, each designed by a leading American designer, which was commissioned and exhibited by the New York Museum of Modern Art.

From Traditional to Abstract

Though many of Stanislav's most impressive creations have been traditional in design, he has also been fascinated by the possibilities of abstract design and has done much to foster an interest in it through his own work and through the design work of other artists. He says: "Today's abstractions have brought a new feeling to floor coverings. I am intrigued by the challenges offered and delighted by the results that can be obtained. I feel confident that the market will be asking for rugs in abstract design . . . for the decorative scheme of the American home."

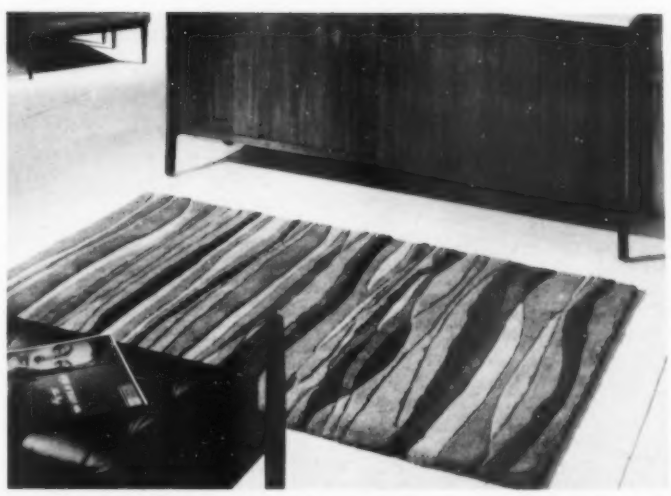
On these pages are shown examples of V'Soske design work. What the photographs cannot unfortunately show is the quality of craftsmanship and color which goes into these productions. And it is in the area of color that V'Soske best demonstrates its quality approach to rug-making.

Fashion Colors and Bleaching

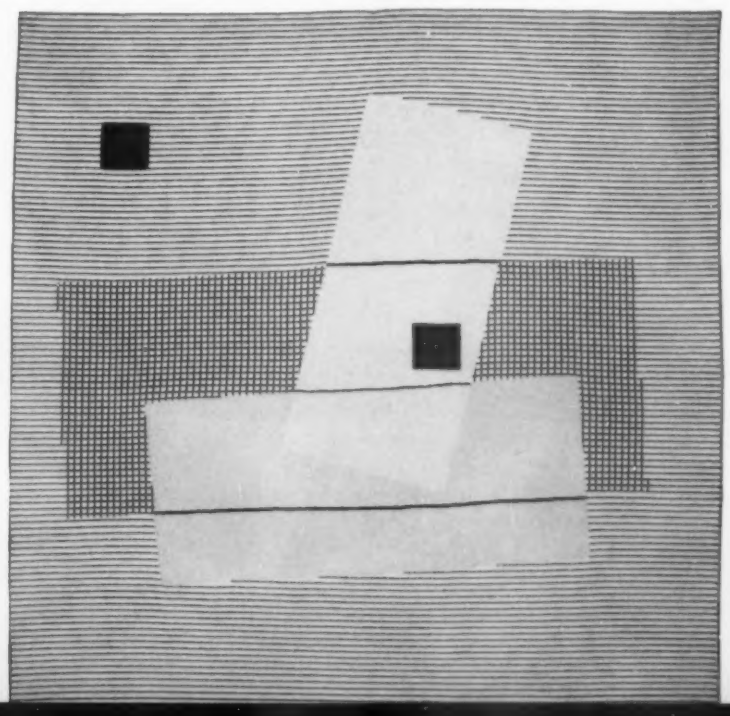
Color is fashion and the current interest in light colors for floor coverings – as well as for rich, brilliant, transparent shades – has created new problems for the wool carpet industry. The oil or lanolin in the sheep's fleece gives the wool life and texture but it also has a tendency to yellow the fleece. As long as rugs and carpets are somber in tone or intricately designed in shadings of deep reds and blues, the yellowness of the fleece presents no problem. Nor is it a problem in such rugs as the Egyptian Kelims where no dyeing at all is done but the wools are used in their natural shadings from light beige to brown and black.

But modern design and fashion trends have made it neces-

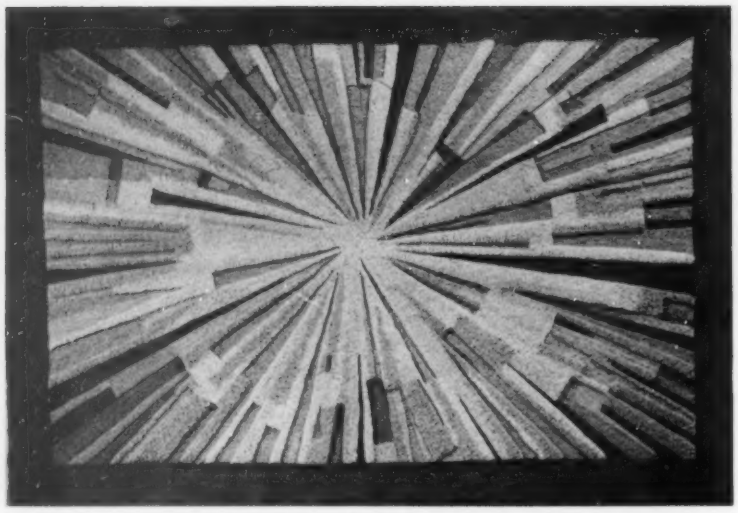
(please turn)



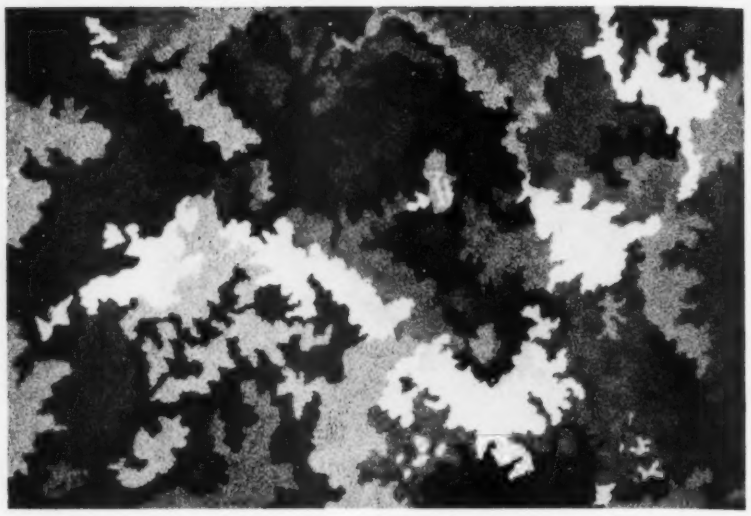
Stanislav V'Soske's interest in abstract design is revealed in this brilliantly colored striped rug which gives warmth and excitement to the clean architectural lines of a modern interior.



"Testa #2" stems from the experimental graphic design work which came out of the Bauhaus.



"Saigon," a sunburst design with an abstract geometrical treatment.



"Spring Meadow" achieves the pattern and color variety of its name.

V'SOSKE *(continued)*

sary to produce white wools and to achieve this whiteness V'Soske goes to extreme lengths. They purchase their carpet wools as white as possible, which means that they must come from the March, April and May clippings. Since they are not satisfied with commercial washing of wool by the use of strong caustics (soda ash) they have built their own scouring plant which uses more costly but gentler detergents. If lighter than natural shades are needed, V'Soske resorts to bleaching, also in their own facilities. Here too, no caustics are used; only peroxide.

100,000 Color Formulas

Finally comes the dyeing of the yarn. Unable to achieve the quality and variety of colorings they required from commercial sources, here again they built their own dye plant, using the best dyes available and specifying either acetic or formic acids for production of the colors. In the thirty years of its custom operation, V'Soske has filed more than 100,000 color formulas and each new custom commission adds still more variations to the vast library of shades available to the interior design clients of the company.

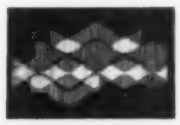
It is this approach to rugmaking and this quality of custom service to its clients which has made V'Soske one of the truly unique textile organizations of our time, harking back to an earlier day when careful craftsmanship and lasting beauty were the criteria by which men worked. •

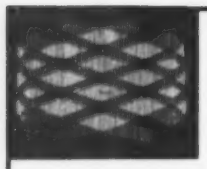
Marguerite Zorach's "Coral Sea" was executed by V'Soske and was part of a V'Soske rug exhibit sponsored by The Museum of Modern Art, N. Y.

DESIGN WORK

BY STUDENTS OF THE COOPER UNION ART SCHOOL

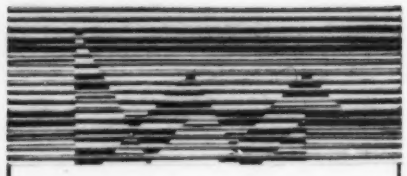
The manipulation, the control, the organization of space is the province of all design — including textile design. Achieving fresh, new spatial relationships is therefore fundamental to creative textile design. The forms and the approaches shown on these pages are entirely the work of students whose closeness to the essential principles gives their classroom efforts an untramelled look which can well be an inspiration to textile stylists in search of new design directions.





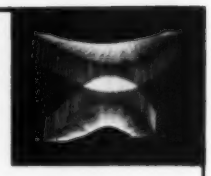
ACT OF SEEING

"The student is trained to realize that every act of seeing is a visual judgment."

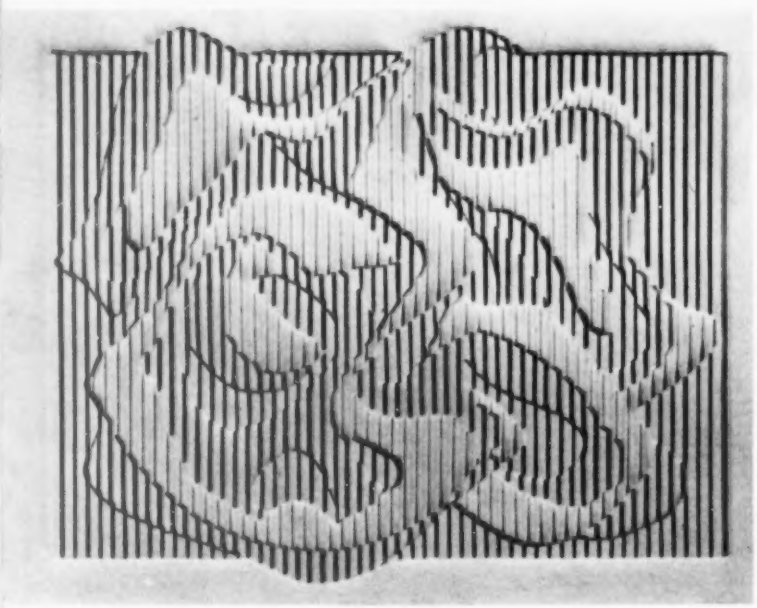


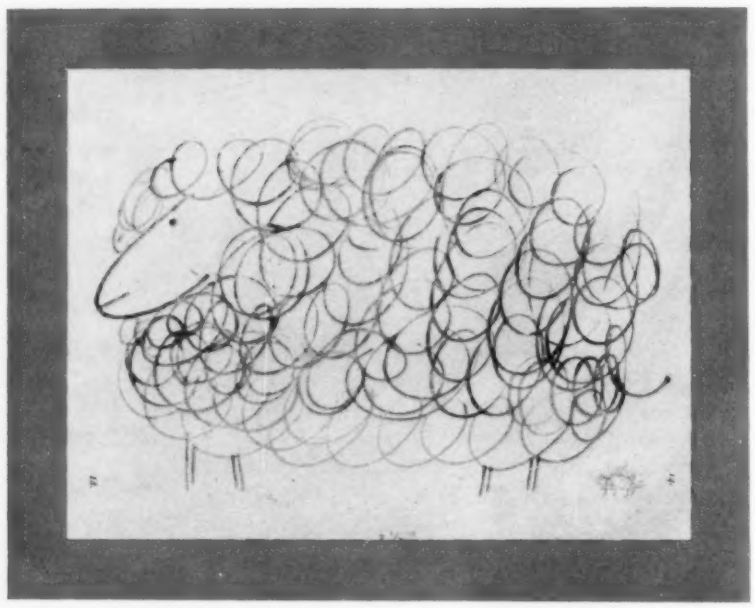
"The student is required to understand classical form as well as to use it freely."

LANGUAGE OF SYMBOLS

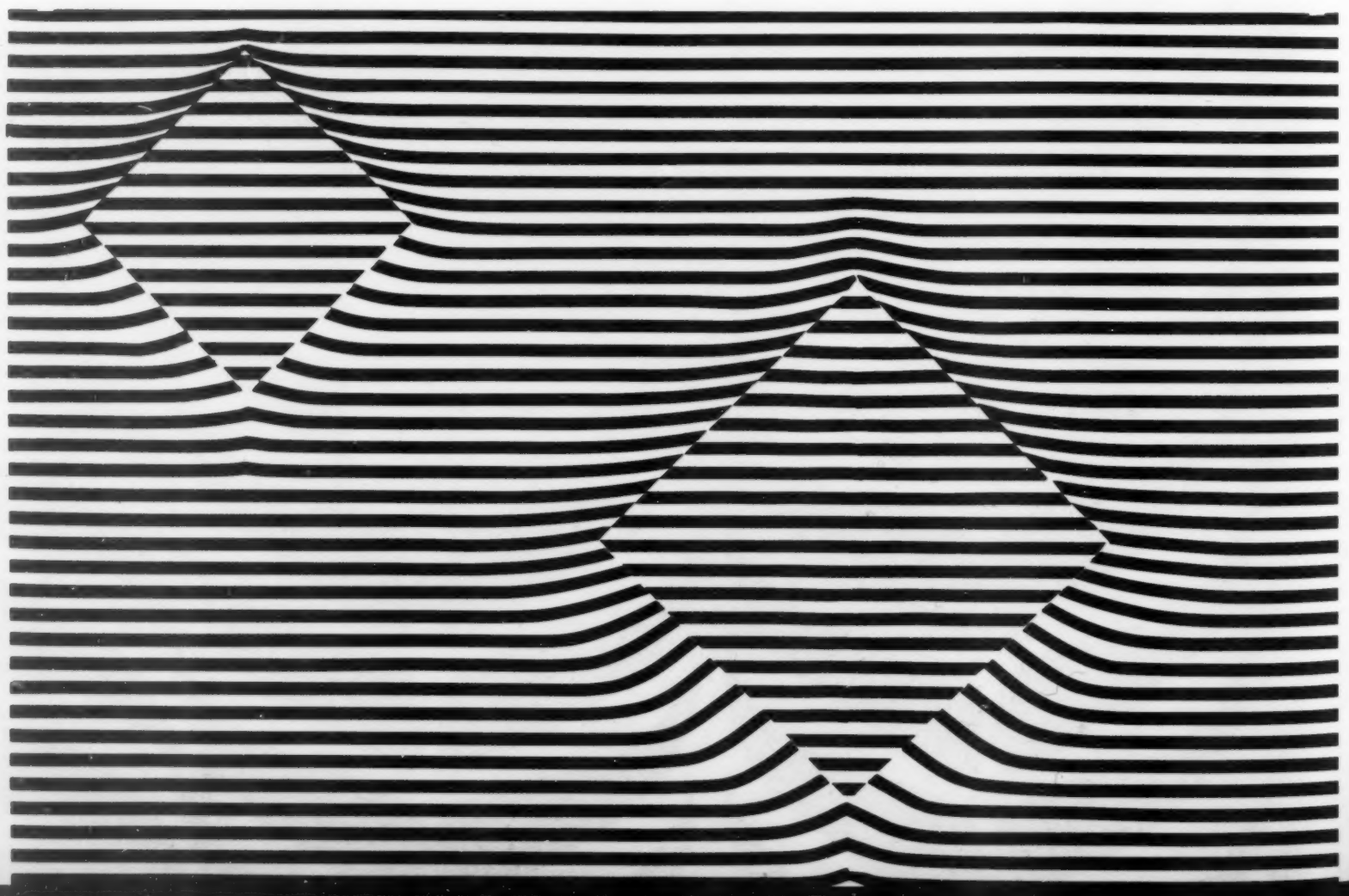


"The student learns to create a language of symbols for non verbal information."





STUDIES IN THREE-DIMENSIONAL LINEAR FORMS . . . . THE FREE-FLOWING CALLIGRAPHIC LINE . . . .



"The mastery of space is the domain of the designer. This is an accomplishment of great importance; a person trained in design will always be the better judge of volume and surface."

STUDENT DESIGN *continued*

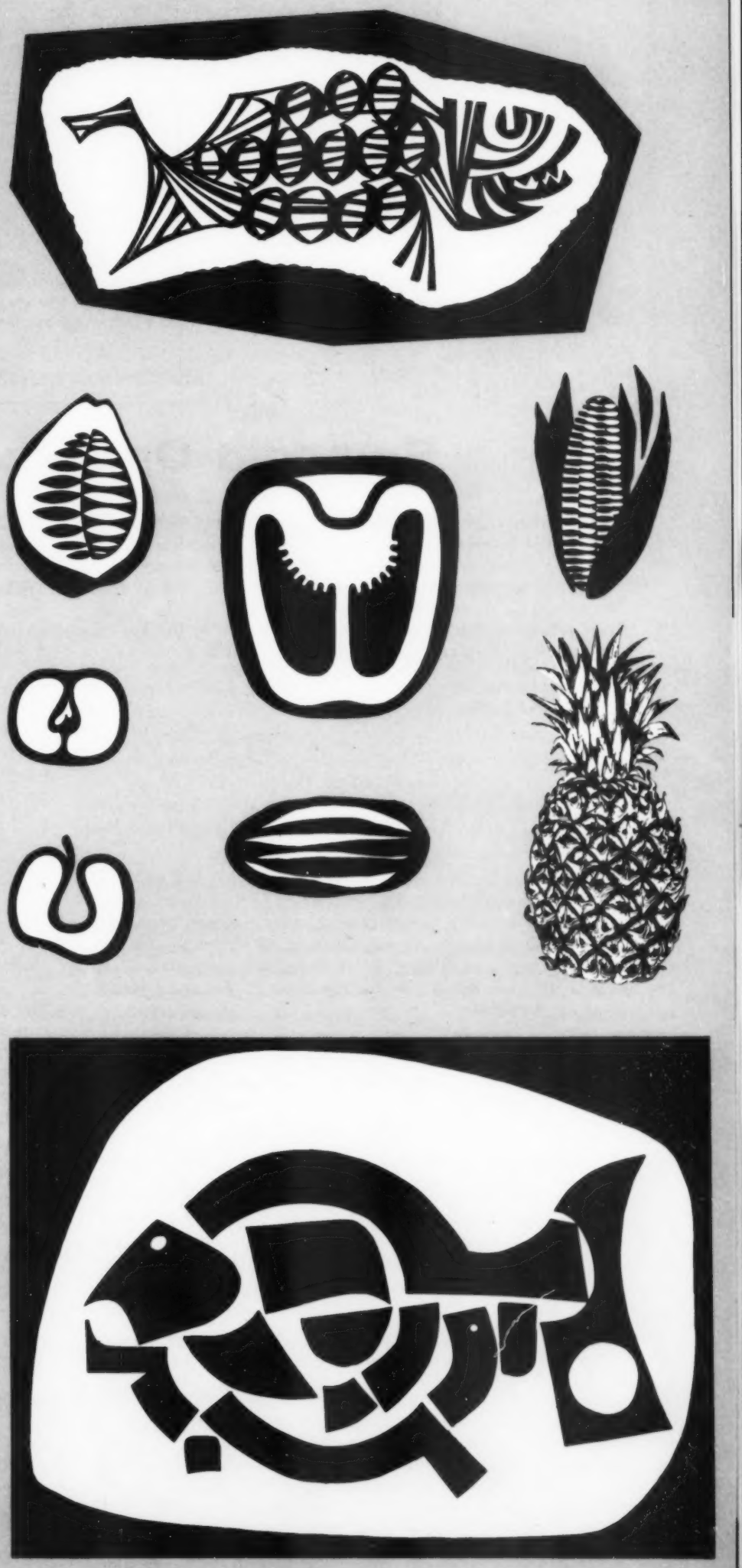
The student designs shown on these pages reflect the high level of creative teaching which flourishes in American art schools today. The selections we have made are from the work of students at the Cooper Union Art School but we might have turned with equal confidence to such schools as Pratt, Cranbrook, U of Illinois, Penn. State, Rhode Island, Michigan or a dozen other equally fine institutions in many different parts of the country.

Such schools are teaching the fundamentals of design with great integrity, are seeking to relate design to an integrated way of life, are aiming to raise the level of taste and understanding both in the future designer and ultimately in the audience he will serve. It is because of this basic approach that so much good design is beginning to emerge on the American scene in all fields of activity from architecture to advertising art.

Textiles obviously have a stake in this modern design movement and the textile industry would do well to pay more attention to this groundswell of design innovation. The young people being trained in these schools today will be the leaders of our visual world tomorrow. It is to them that the textile industry must turn for the fresh new design thinking it will need in the years to come.

The quality of their approach to design is revealed in the quotations on these pages which are taken from the writings of Raymond Dowden, Head of the Department of Design at Cooper Union.

"The vertical and horizontal subdivisions of the format – whether in a painting, a textile design, a printed page or an architectural elevation – must be understood as the structural skeleton of all graphic forms."



Japanese Crown Prince Akihito and Princess Michiko wearing the ceremonial silk Court Robes which originated almost a thousand years ago.

EDITORIAL COMMENT

Splendid Opportunity for Silk

THE STATE VISIT of the Japanese Crown Prince Akihito and his bride Princess Michiko to the United States has turned our thoughts to the subject of silk. For the editors of a fabrics magazine this is a natural association. Japan continues to be the world's leading producer of silk – the Queen of Fibers. And it was an Oriental Princess (so the legend reads) who accidentally discovered silk some 4000 years ago.

Having made our ceremonial bow to the past, let us turn to the future of silk in the United States.

During the past few years it has become increasingly apparent to us that the promotion of silk in the United States lacks the aggressiveness which is needed to give silk its rightful place on the textile scene. We feel the promotion of silk is too limited, too subtle, too understated and too conservative.

True, a considerable effort is made to impress the designer and the manufacturer. But what of the retailer and the consumer? Where are the storewide promotions on silk? Where is the retail advertising on silk to equal the promotions of other fibers and fabrics? What organized, consistent effort is being made to win over the consumer on whom the future of silk depends?

American Fabrics has frequently taken the position that consumer interest in silk is growing. We are more convinced of this than ever, and we believe the time is now ripe for a major effort by the industry to tell the story of silk to the public at large – and to tell it aggressively.

Corroboration for our belief comes from several sources:

1. In a message to the American silk trade which appeared in the Number 49 issue of American Fabrics, Itoji Muto, head of the huge Kanebo mill group, stated his reasons for believing there is a revival of interest in silk throughout the world. He listed the rising standards of living and taste, the maturing of a new generation of silk users and a new psychological interest in silk as a fiber of luxury. Mr. Muto's sources of information are world-wide and his opinions carry great authority.

2. From an entirely different source comes specific corroboration by American consumers. Dr. Ernest Dichter's Institute for Motivational Research recently conducted a study on the attitudes of American women towards silk. The study involved interviews with women of all ages and all income levels. In all cases it uncovered a great revival of interest in silk, an emotional involvement greater than that enjoyed by any other fiber.

3. We too, in a tentative way, have been polling the opinions of women – in regard to silk stockings. To our surprise we find the great majority of women we have talked with would like to see silk stockings revived and look forward to the luxury of wearing them.

• • •

Undoubtedly many other examples could be uncovered to demonstrate the American consumer's latent interest in silk. The examples we have mentioned are all straws in the wind, pointing to the era of "Fiber Co-existence" which we are now entering. We see no basic conflict between silk and the new man-made fibers. We believe there is room for both in our expanding economy, as there is room for all the natural fibers.

What is needed, however, is a new aggressiveness in the promotion of silk to the American consumer – a consistent approach which will tap the revival of interest in silk and give it equal importance with all the other fibers whose stories are being aggressively projected to a wide public through all the contemporary media of communication.

The Imperial Family of Japan, photographed following the wedding of Crown Prince Akihito and Crown Princess Michiko. Left to right: Prince Yoshi, the Empress, the Emperor, the Crown Prince, the Crown Princess, and Princess Suga.

Photographs courtesy Consulate-General of Japan, N. Y.

The STORY of ANSONIA MILLS

How an inventive management has made Flexibility and Fit the bywords in the creation of a unique textile organization . . . and, with its Fabulastic® fabrics, the answer to the modern woman's demand for comfort and control.

AN AF MARKETING REPORT

ANSONIA MILLS *and its* FABULASTIC

A Decade of Success

ONE OF THE most rapid growth patterns in the textile industry has been traced by Ansonia Mills in the short space of a single decade. To understand how the vigorous young management of the company turned potential into success within ten years, a brief excursion into the ancestry of Ansonia would be a profitable side trip.

The Ansonia name harks back to 1847 and the Ansonia Osborne and Cheeseman Company, a webbing plant engaged in the production of narrow web elastic braids for such items as underwear, foundations, shoelaces and cartridge belts. A family run company, Ansonia O. & C. lost ground steadily in the years after World War II.

By 1950, the situation at Ansonia O. & C. was crucial and the family sold out to an experienced mill operator, Jack Ziskind. From this time forward, a rush of events took place that changed every aspect of the old Ansonia company. Mr. Ziskind first purchased a faltering 300-loom operation at Taunton, Massachusetts, devoted to the manufacture of rigid corset brocades, some dress fabrics and a few elasticized fabrics. A few months later, Mr. Ziskind also purchased a going concern producing high-quality elasticized fabrics called Delite Fabrics at Westerly, Rhode Island. The three companies were then combined into a new corporation, Ansonia Mills, reorganized under new management with its present owners: David Squire, and Leonard Berkowitz in vital posts.

The herculean problems of consolidating the Ansonia operation under one roof in the spacious plant at Taunton; of substituting modern for antiquated equipment; of creating a new and effective sales force; of getting supplies in a scarcity market; of meeting the competition of successfully operating companies in the field of broad woven elastic fabrics and rigids were squarely faced by the new management. Their success is illustrated by the fact that Ansonia's fiscal picture changed dramatically from heavy loss to consistent volume growth and profit within 10 years.

An Ansonia First

SCIENTIFIC TESTING

Ansonia's quality control and testing lab was a first for the woven elastic field, enabling the company to test aging of rubber, and other stress, wear and dyeing problems which would affect the customer's end product.

For the past eight years, Ansonia Mills Incorporated has grown at the rate of 20% per year. Now, with the growth pattern showing further development, including planned expansions outside of the United States, the interesting question is, "What makes Ansonia grow?"

A Specialist in Elasticized Fabrics

By standards of the textile giants, Ansonia Mills is a small organization. It employs about 500 people and specializes in one basic commodity—elasticized fabrics, marketed under the brand name of Fabulastic. The very nature of Ansonia's product and the type of customers it serves demand flexibility. The heads of Ansonia developed a creative mill, geared to achieve quick adaptability to new fashion trends and the most modern technology in the field of elasticized fabrics. The factors of flexible mill operation, scientific management and young, aggressive administration have combined to meet specialized needs as they arise. Ansonia's success also stems from its ability to control quality throughout every phase of manufacture from the covering of rubber yarn to shipment of fabric.

An Ansonia First

CORDTEX—RIGID STIFFENER

A patented rigid stiffener for bras, Cordtex (TM) is the exclusive Ansonia product which is used in famous Sears Roebuck bras.

A Willingness to Experiment

Ansonia employs a custom approach to the individual requirements of its clients, mainly the country's leading manufacturers of swimsuits and foundation garments. The fashion houses who work with Ansonia have been attracted by the mill's willingness—even eagerness—to experiment with new ideas, new constructions, textures, colors and patterns. Inevitably this creative, flexible approach has led to the development of new ideas which have won the interest of other manufacturers outside the field of swimsuits and foundation garments.

From Bras to Upholstery

Fabulastic elasticized fabrics bring flexible fit in a new dimension to a wide variety of products. For bathing caps, stretch boots, stretch pants, belts, children's wear and for many industrial uses, the advantages of elasticized fabrics are obvious. Less obvious but most exciting is the concept of using such fabrics as upholstery material, in the home, in office buildings and in the field of transportation.

Scientific Management

The slide from peak to valley in the textile industry is largely the result of overproducing in order to keep equipment going. But at Ansonia management runs the looms to fit the customer's purpose. This realistic operation, combined with advanced techniques and modern marketing methods, is in the hands of a carefully planned organization which allows maximum responsibility and creativity to each member of its team.

David Squire, the young progressive President of the company, puts it this way: "We believe the textile field can operate on the sound management and organizational principles which have proved effective for other industrial organizations. Each of our key persons has the authority – as well as the responsibility – to do his job creatively, be he salesman or plant supervisor.

"My own job I see as one of direction – to point the way, to offer constructive criticism, so that we may profit from our mistakes."

It is this kind of thinking – this rare combination of modern management philosophy and creative individualism which has reversed the fortunes of a "dated" organization and built Ansonia into one of the leading companies in its field, in ten short years.

Planned Growth

When you ask David Squire to look into the future of his business the picture which emerges is not vague or wishful. It is a clear, sharp picture of planned growth. It involves: immediate expansion for Ansonia's new two-way stretch power net; the development of more fabrics for more uses; continuing technological improvements at the mill level; regular replacement of marginal equipment, with the most advanced machinery available. To this end, Ansonia ploughs back substantially all of its profits into the company. By maximum reinvestment in the future, Ansonia is making way realistically for still another decade of growth.

An Ansonia First

ANOSTAY – THE DYEFAST PROCESS FOR SWIMWEAR

This process, developed at Ansonia Mills, gave swimwear users of elasticized fabrics insurance of color fastness when using Fabulastic colors with white trims. Result: no bleeding.

Growth and Diversification at Home

When Ansonia Mills Incorporated started operations, its production was almost entirely sold to the foundation industry. Today, while the leading brand names in foundations still use up a major portion of Ansonia's overall production, Fabulastic is also widely featured in swim fashions. In both areas, Ansonia works with the leaders, the large-scale manufacturers. Ansonia is active on the highest quality levels. Its power net is fashioned on the most modern machinery in the knitting field. It is carrying on large scale experimentation with new developments in nylon and with spandex rubberless stretch fibers.

The New European Market

The future for Ansonia includes the European market. About 10% of Ansonia's production is sold in Europe. With an exploding population and a standard of living that is rising at a phenomenal rate, Europe is a market of great potential in the view of Ansonia's growth-minded president. A joint Ansonia-European company is being considered in the Benelux area.

The future of Ansonia can indeed be summed up in the slogan which Dave Squire coined for a trade ad in 1952. It read: "No barnacles!"

An Ansonia First

ELASTICIZED PAISLEYS, MATELASSES

Elastic paisley, developed two years ago, and the all elasticized matelasse fabrics currently popular, are typical Ansonia styling and design firsts for the swimsuit field.

The Men Behind Ansonia and its Fabulastic

The key word here is *young*. David Squire, president of the company supervising all marketing and sales, is only 34. Leonard Berkowitz, Board Chairman and Treasurer, in charge of production, is 37. The average age of Ansonia's key men is under 40.

This young team brings youth's traditional energy, enthusiasm, and eagerness to explore new ideas, to a field where more traditional points of view often hold sway. In addition, the young leaders of the Ansonia enterprise represent the ideal "outside man – inside man" combination which has spelled success in the textile field many times. Squire is the natural outside man, an alumnus of Dartmouth, the Tuck Graduate School of Business Administration,

An Ansonia First

ANOSET (TM) – ORIGINAL AND EXCLUSIVE ANSONIA FABRIC

Ansonia Mills custom-creates an elasticized fabric for specific needs – revolutionizes the strapless bra. The base rubber thread clings to the skin without binding or irritating. The product has been patented and held valid in courts against infringement.

and the sales force of 20th Century Fox. Leonard Berkowitz supervises the inner workings of the plant. A graduate industrial engineer from Cornell, he received intensive training in plant operations within textile mills in New England and the South before joining Ansonia Mills.

Both men have trained themselves in all aspects of the company operation. They have been able to create an integrated organization which is unique because, though it is scientific, it is not constrained by traditional ways of doing business.

Dave Squire has close personal relations with Ansonia's customers. The major part of its business is done with relatively few manufacturers, all of whom recognize the integrity and value of the quality fabrics on which Ansonia's reputation is built. "Integrity is very important to us and regardless of changed circumstances we will stick to our word on anything."

Creativity as well as integrity is a cornerstone of Ansonia's creed. In this area, 33-year-old Tom Coughlin makes his contribution as Product Development and Marketing Manager. Entering the company as plant supervisor, he is now responsible for developments in styling, overall planning of lines, and researching of new markets for Fabulastic. His growth within the company is symptomatic of management's alertness to, and recognition of, ability.

The sound fiscal structure of Ansonia, its purchasing, costing and quality control, are under the aegis of Jack O'Donnell, Vice-President and Controller.

An Ansonia First!

1956 – FIRST EXPANSION OVERSEAS

Working with a licensee in Australia, Ansonia Mills helped set up a modern plant for broad woven elastic fabrics. Result: growth tripled in three years, reputation outstanding, creative ideas exchanged.

from WHALEBONE *to* POWER NET

the progress of foundations in our time

It is a well know physiological fact that women have great powers of endurance. Who but women could have endured the rib-crushing restraints of the rigid corset, boned in horn or whalebone, that gave the lady of the 1800's her modish shape . . . and not a few of her palpitations, fainting spells, and abdominal disorders.

Around 1880, the fashion of the bustle added even more discomfort to the female, especially the seated female. Women had to perch gingerly on the edges of chairs, leaning forward precipitously to allow room for the omnipresent bustle.

In fin de siécle days, along came the rust-free corset! Highly recommended for seaside wear beneath bathing costumes, this design introduced rust-proof steel boning – hardly more comfortable than whalebone but less expensive and more practical. It did not rust lady's underclothing!

By means of such strictures, women attained the then fashionable figure: a tiny waist, a balloon hip and a bulging abdomen. As one reporter states: "Woman's soft body was encased in steel."

Suddenly, in 1900, the Kangeroo figure came into its own (it has gone down in history as the Gibson Girl figure). The straight front corset appeared . . . shaping a figure straight as a ruler in front and curved as a camel's hump in back. But despite these oddities, the straight front corset was more comfortable than those of the past because it had – for the first time – hose supporters. Formerly, girdles had been anchored only at the waist, and had to be tightly laced to the point of coma.

The waistline rose and fell. The hips were confined and freed. The bosom was swathed and bound. Almost everything happened to fashionable figures except a feeling of comfort. Whalebone was the luxury boning as late as 1912. Spring steel covered with hard rubber or celluloid took over then. And as recently as the nineteen thirties (only thirty years ago) every girdle was made of rigid, inflexible fabric because there wasn't anything else. In the roaring twenties young girls parked their corsets in coatrooms before going to a dance.

The advent of extruded rubber thread put an end to such shennanigans! At long last, technology had developed an elastic thread as fine as sewing silk yet unbelievably strong. Woman was finally able to stand, sit, stride, bend – and still look fashionably beautiful!

The progress from the first elasticized fabric to the latest two-way stretch has been the progress from relative ease to almost sinful comfort! Today, power net molds figures like a sculptor, yet weighs in at ounces, feels like nothing on. Many two-way stretch garments have no bones at all – the ones that do have the lightest possible boning. What hath science wrought! In such a brief span, too. In less than 30 years, women have gone from rigid corsets to Fabulastic power net. To some frivolous types, it's more important than the vote!

from FLANNEL *to* FREESTYLE *history of the swimsuit*

Boon to nature-lovers and beauty contest judges, the bathing suit has had as stormy a history as any sea-borne hurricane. It has caused long sermons, short jail sentences, and at least one near-riot. Yet this controversial piece of clothing is a comparatively new fashion wrinkle.

Julius Caesar, for example, would have been shocked at the sight of a bikini, or even a one-piece model. In Caesar's day Romans wore no bathing suits at all. As late as 1800 most swimmers valued ocean bathing for its healthful benefits in the most direct way possible. Modesty was served by segregating men and women on separate beaches. However, when people realized the tonic effects of coed swimming, men faced the waves in their dressing gowns. Ladies swam in a flannel cloak tied at the neck. By 1850, however, folks were taking no chances. Men got off relatively lightly in striped woolen trousers that reached to mid-calf and high-necked T-shirts that dropped to the knees. On the other hand, they had to look at girls screened from collarbone to instep by blouse, skirt, pantaloons and stockings – about 10 yards and 30 wet pounds of modesty. Underneath there were rustproof corsets, just in case they were foolhardy enough to try to swim.

In 1909 all was changed. An Australian swimmer named Annette Kellerman, brazen in figure-fitting jersey with sleeves shortened almost to her shoulders and trousers ending two inches above her knees, said, "I want to swim." She was arrested in Boston, but began a fashion trend to suits that fit, and swim.

Police tried at first to defeat fashion. Official 1917 beach regulations barred any suit that exposed a male or female chest "lower than a line drawn on a level with the armpits." Men were required to wear a long shirt, "a skirt effect," or knickers; damsels were demure in bloomers and skirt. Skirt, shirt, bloomers, or knickers, could not rise more than four inches above the knee. In 1920, police patrolled our shores with yardsticks. Yet they were already fighting a lost cause because the fabric of most suits was a knit which fit and clung and made swimming really a pleasure.

The Annette Kellerman idea continued to prove irresistible. In 1933 the woman's maillot – a skin-tight one-piece wool knit job resembling a dancer's leotard – arrived from France, causing a near riot when viewed by a crowd grouped in front of a New York department store window. Soon our shores were swept by a new tidal wave from France, the two-piece suit, which was nothing more (but often considerably less) than the maillot chopped in half. At the same time, men were wearing new detachable-top suits, often taking full advantage of the option. Many of our best-formed citizens were arrested. By 1935, the law-enforcers had surrendered, unofficially. Our girls had. lost none of their pioneer spirit, however. If knit wool was figure flattering, what about rubber? All-rubber suits were worn for a time in the '30's. Clammy and wet, embarrassingly apt to rip, they made a fast exit from the beaches. So the elasticized bathing suit provided the fit that kept our policemen vigilant during the '40's.

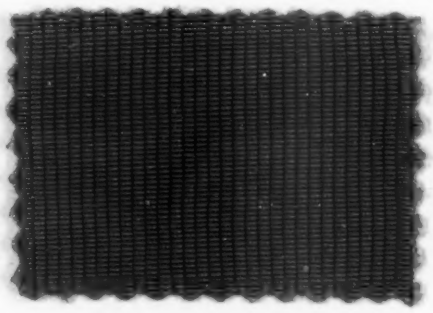
Today the trend is to resilient elasticized fabrics. Unlike the fragile all-rubber suits of 1936, many are made of sturdy Fabulastic, fabrics made by wrapping rubber thread or spandex with cotton, wool, acetate and many popular fibers. Fabulastic is dyed and woven into a rainbow range of colors and patterns (yes, you'll even see an occasional tweed swimsuit). Introduced only ten years ago, Fabulastic now appears in swimsuits by the best designers in the field. And it has made beach decor more alluring than ever.

Will there be any fundamental changes? Says one expert on the subject, "No further 'breakthroughs' in diminishing suits are expected. Men's, and women's, suits have gotten about as small as they legally can, and they certainly won't get bigger. But the future in swimsuit fabrics is unlimited."

the ADVANTAGES of FABULASTIC

POWER NET

Knitted Fabulastic . . . the two-way stretch for foundations with as much control as beauty.

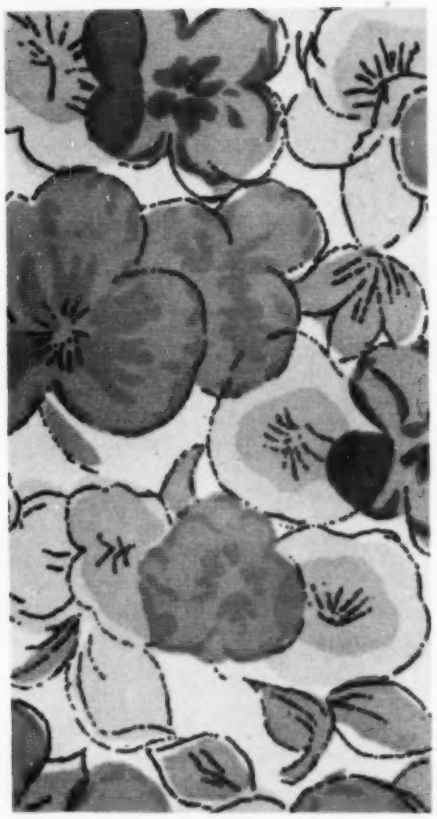


EXPERIMENT GX—EXCITING CORD

This is a test fabric created for industry. Probable future – wide use in industrial and consumer upholstery.

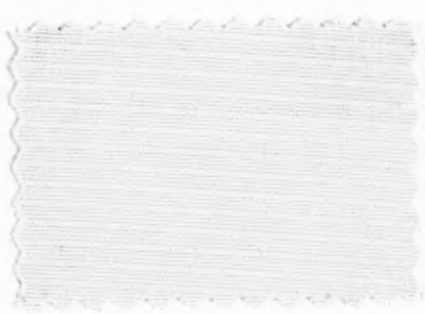
PREMIERE OF WORSTED ELASTIC

A totally new fabric of fine two-ply worsted and wrapped elastic yarn, sleek yet sturdy in texture and appearance. First thought – stretch pants.



FABULASTIC FOR PRINTING

Solid color or fancy, Fabulastic fabrics are often overprinted by Ansonia customers to coordinate with other beach fashions and fabrics.

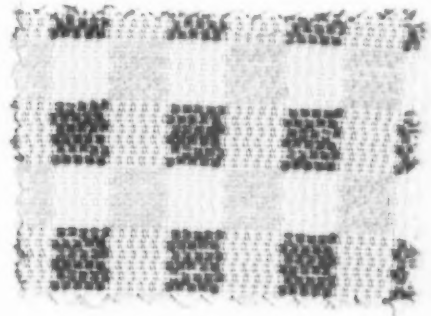


ANOSET® LENO

Feel this back – you'll see why the cling construction has done more for strapless bras than any other fabric! Airy weave – extremely comfortable.

SPANDEX SATIN

Luxurious stretch fabric for girdles and bras. Lighter, cooler, fresher-feeling, machine washable . . . and it's rubberless!



THE CURRENT CHECK

Novelty for new swim lines. A crisp styling in dark, bright or pastel colors checked with white.

NEWCOMER! ELASTIC DUCK

Making its debut in '61, the new Fabulastic staple for swimwear lines. This casual, extremely chic elasticized fabric comes in a spectacular color range, is suitable for other uses as well.

1. QUALITY CONTROLLED from bare rubber to finished fabric—all under one roof.

2. CUSTOM DESIGN, for the special needs of the customer, by a young and progressive management eager to try out new ideas.

3. EMPHASIS ON FASHION. A styling department alert to the latest fashion trends both here and abroad, continually experimenting with new fibers, new constructions, weights, textures, colors and patterns.

4. VARIETY IN STYLING. A wide range of fashion colors and patterns in prints, solids, plain and novelty constructions.

5. STRONG ON PROMOTION. The most extensive fashion advertising and promotion campaign in the industry – on both trade and consumer levels.

6. FAMOUS NAMES. Among the leading fashion names which use Fabulastic fabrics are: Catalina, Formfit, Gossard, Jantzen, Lady Marlene, Peter Pan, Playtex, Rose Marie Reid, Cole, Warner, Olga, Elizabeth Stewart, Sirena, Sea Gems, Maidenform and others.

All under one roof, the Ansonia plant at Taunton, Mass. has a continuous, streamlined operation.

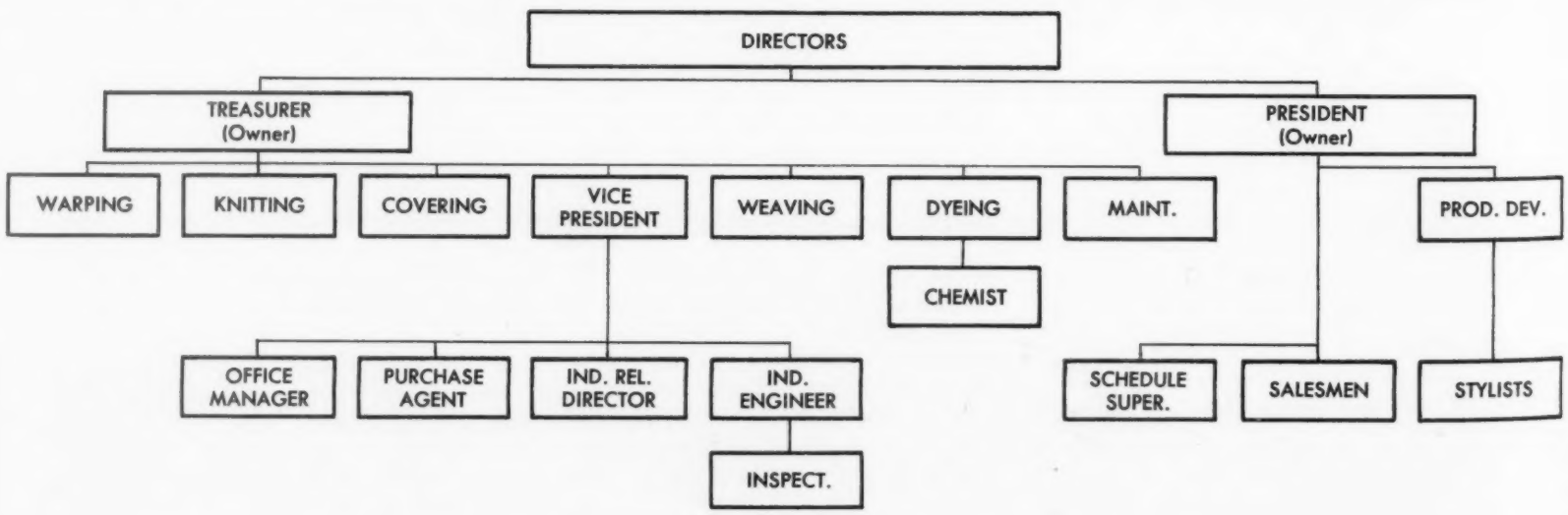
ANSONIA is an INTEGRATED OPERATION

Quality control lab – heart of the mill.

The Ansonia mill at Taunton, Mass., is unique in its field. It has, on one floor and under one roof, the full range of processing from the covering of rubber yarn to weaving, dyeing, finishing and shipping the fabric.

This vertical set-up operates on a production-line basis. Rubber thread is purchased from firms like Globe, Precision, Easthampton and Carr. Man-made yarns come from DuPont, Celanese, Eastman and others. Cotton yarns are bought from leading spinners such as Dixie, Acme, American and Efird. All these components are assembled in the Taunton plant. Here the rubber or spandex is wrapped with the various yarns. It then moves on to the preparation and weaving departments, and from there to dyeing and finishing.

This centralized and integrated operation has tremendous advantages when it comes to experimenting with new ideas



ORGANIZATION CHART of ANSONIA MILLS

and running trial yardage through the mill. It becomes possible for the customer to see the results of experiments quickly and it allows the designer to follow the experiment through every step of the process. It offers the equivalent of a pilot plant operation with the conditions of full plant production.

Continuing Research, Development and Quality Control

Ansonia Mills prides itself on being future minded. The past is done, but this young and vigorous textile operation intends to have a firm grasp on the future. For this reason research, development and quality control are not only the active concern of the key executives, but are supported by top flight craftsmen with top flight tools. Three service functions maintained by Ansonia Mills, which are cornerstones of Ansonia's future, designed to maintain leadership in textile technology, in quality performance and fashion styling, include:

PRODUCT ENGINEERING. Standards are established and rigidly policed by textile technicians and engineers. Quality control, product specification, raw materials acceptance and finished product testing are carried out on a continuing basis, helping to make product integrity a by-word with Ansonia customers.

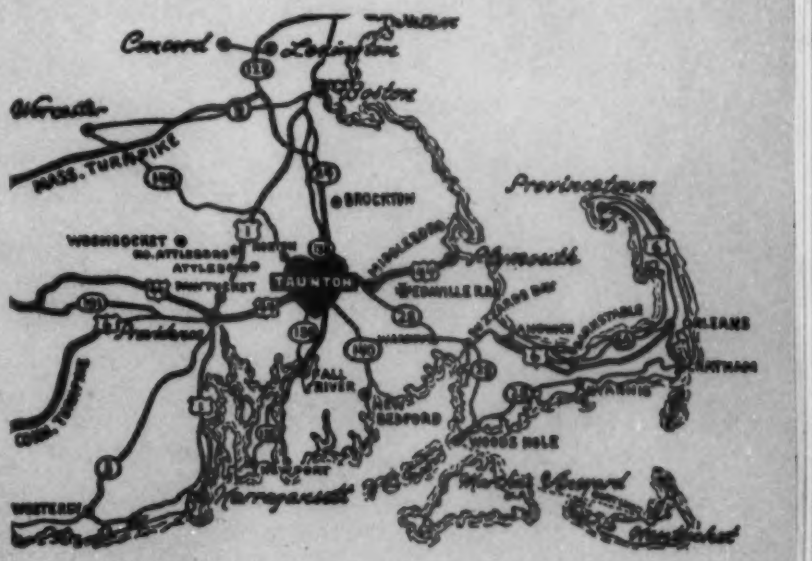
TEXTILE CHEMISTRY. A fully equipped laboratory is staffed by technicians familiar with all the chemistry of fiber, dyes and finishes. One of their important functions is the creation of new colors and the accurate matching of shades submitted by Ansonia's customers. This technical service is directly integrated into the plant dyeing operation; there is no ivory tower for Ansonia's chemists.

PRODUCT DEVELOPMENT. In working with Ansonia a manufacturer is assured the same fashion understanding and knowledgeable cooperation he expects from his own fashion staff. Ansonia's stylists, working closely with Tom Coughlin, Director of Product Development, produce a continual flow of new colors and new constructions. It is this department which is at the service of the customer's own fashion staff to develop new fabrics for special end use requirements.

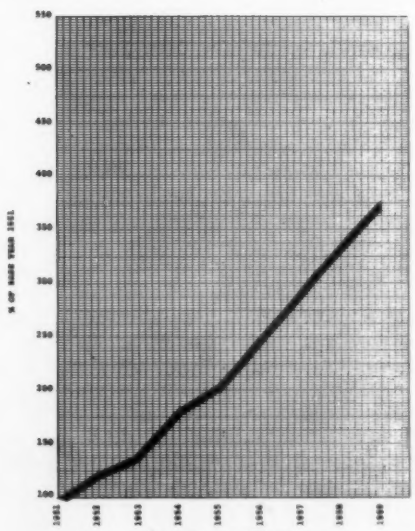
FABULASTIC ADVERTISING

tells the story of Flexible Fit

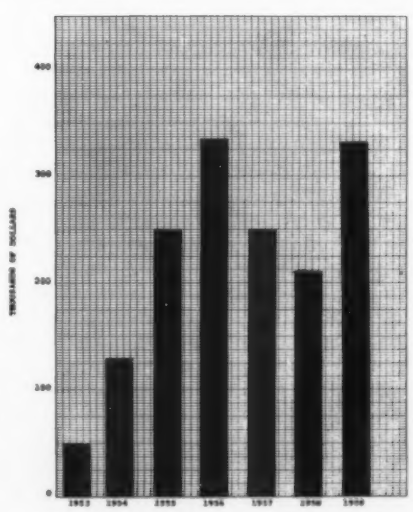
Ansonia is today the country's leading advertiser in the field of elasticized fabrics. Its modern approach to textile management and promotion has resulted in a growing brand identity. It has a secure base in the fashion industries and is rapidly expanding to other fields where elasticized fabrics can make a valuable contribution to improve products for both industry and the consumer.



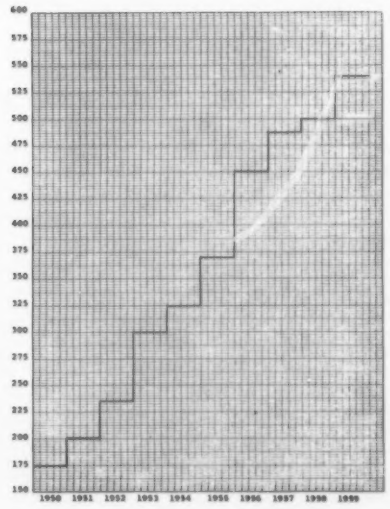
Visitors are always welcome at Ansonia's Taunton plant which is close to many historical sites as well as the resorts of Cape Cod.



ANNUAL SALES

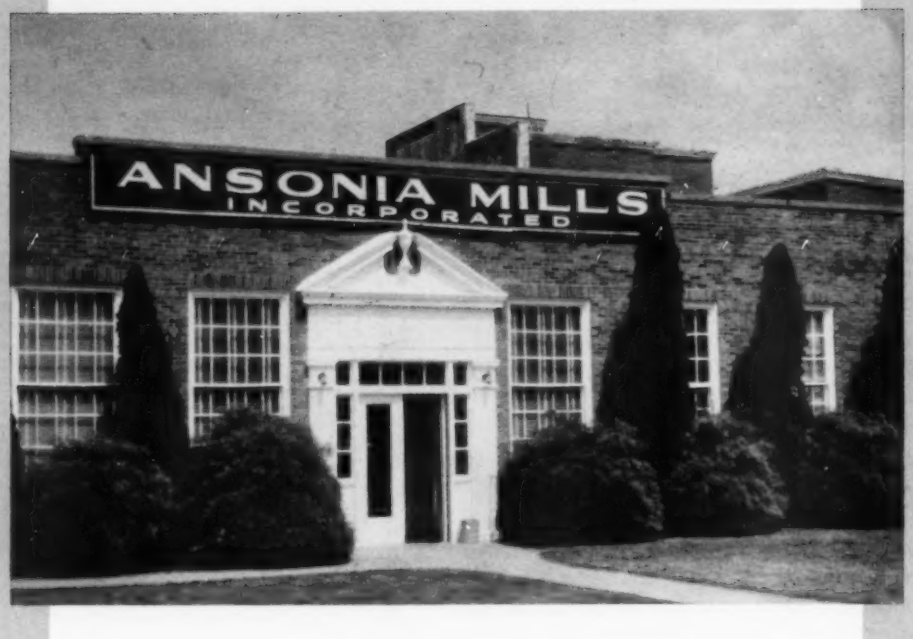


PLANT EXPENDITURES



NUMBER OF EMPLOYEES

Ansonia's rapid growth is revealed in the above charts showing rise in sales, plant expenditures and number of employees.



an

Invitation

to

Industry

"We at Ansonia are deeply committed to the development of elasticized fabrics for upholstery, for transportation, for footwear, headwear, fashions and accessories, industrial applications and many other end uses. We anticipate the future for fabrics and new end uses by research and development. We welcome the interest of manufacturers in every field who are eager to experiment on specialized fabrics for new end uses. The gates of our Taunton plant and the doors of our regional headquarters are always open to interested visitors."

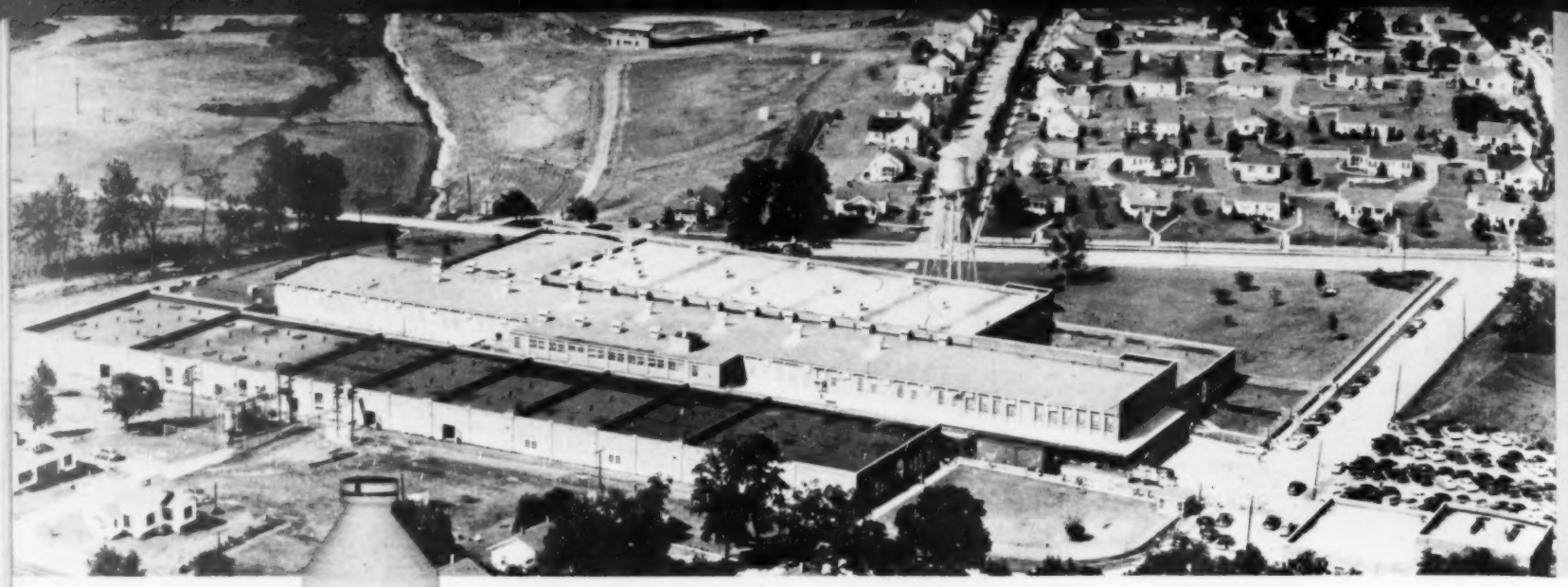
David Squire

PRESIDENT

Opening
the
Door
to
NEW *Fashion* VISTAS
in

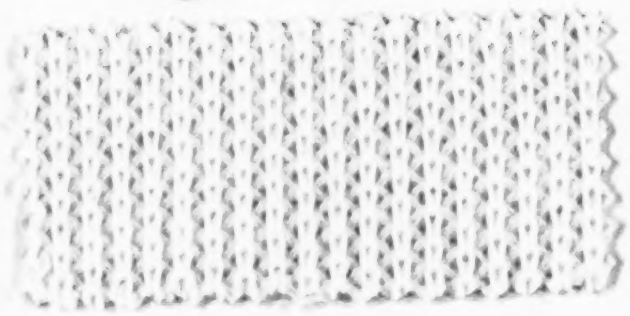
CUSTOM BLEND YARNS

An AF Marketing Report on COLLINS & AIKMAN



Aerial view of Collins & Aikman plant, Norwood, North Carolina.

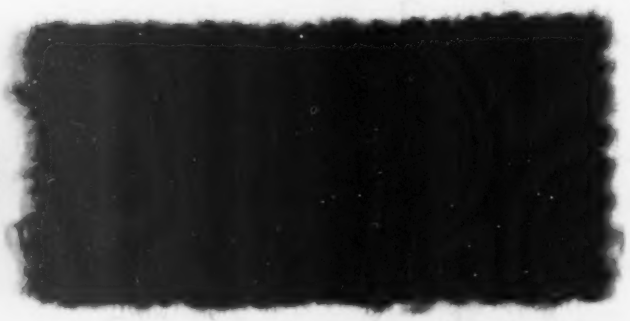
CUSTOM QUALITY YARNS
for the Fashion Industries



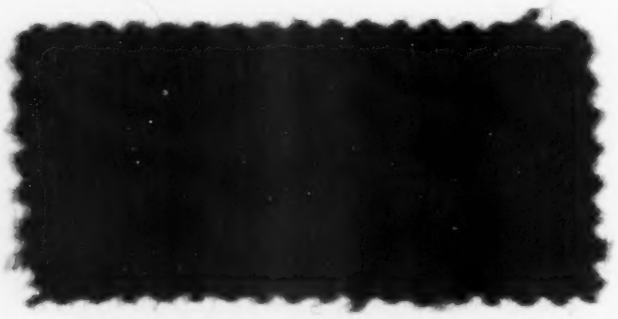
100% orlon fleece knit from *Security Mills.*

Brushed wool and mohair blend by *Gotham Knitting Mills.*

C & A Fabrics Reveal Custom Approach to Spinning and Blending



Wool and mohair blend Chevron knit from *Puritan Sportswear.*

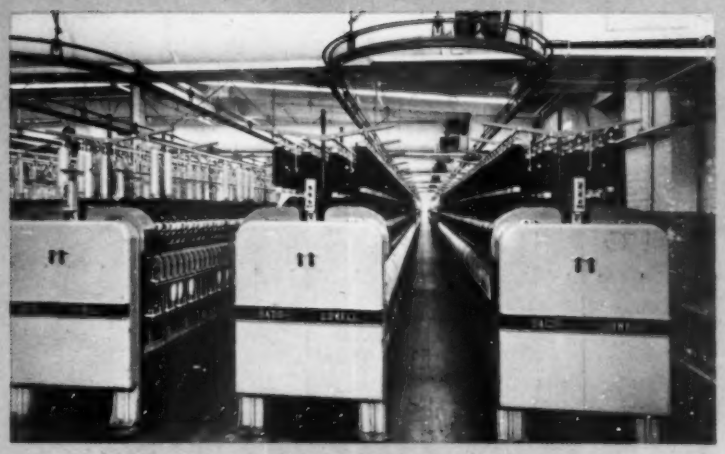


Blend of orlon and wool achieving tweed textured effect. Woven by *Crestwood Mills.*

FASHION KNITTERS AND WEAVERS ARE FINDING C & A A RELIABLE RESOURCE FOR NEW AND CONFINED IDEAS IN BLENDED YARNS

Among the unusual yarns recently developed by C & A are such custom blends as deer hair and wool . . . mohair and Orlon . . . silk and wool . . . linen and wool . . . wool, Orlon and silk . . . Dacron and linen . . . cashmere and Orlon . . . alpaca and wool . . . mohair and Dynel . . . Dynel and nylon . . . and many others.

These custom blend yarns have all been perfected either in the normal course of C & A's experimental work or in response to the requests of its customers. The list of these customers ranges over many fields and is C & A's most impressive recommendation for the quality and creativity of its work. It includes national fashion brands like Rose Marie Reid, Helen Harper, Puritan, Robert Bruce; firms like Crestwood, Vargish, Security, Carlton, Frankfort, Dewey, Strauss, Minnesota and Empire; organizations like Timme, La France, Einiger, Burlington, Stevens, Milliken and Cohn, Hall Marx.



Shown above are sections of main spinning rooms.

Long experience in making special yarns for its own specialized fabrics has given Collins & Aikman the ability to offer outstanding service and creative experimentation to the satisfied clients of its Yarn Division

A visit to the Collins & Aikman showrooms in New York is a revelation in textile versatility. To those who know C & A as America's biggest manufacturer of upholstery fabrics for the transportation and furniture fields, it may come as a surprise to learn that the company also produces a unique group of pile fabrics for apparel, specialized fabrics for industry and a broad range of yarns for the knitting, weaving and tufting industries.

Each of C & A's six divisions has its own story to tell, but for the purposes of this report we throw the spotlight on its Yarn Division which was organized in 1943. Located in Norwood, N.C., the C & A spinning plant is one of the most up-to-date installations of its kind in the country, boasting over $2 million worth of new equipment for spinning and blending specialized yarns. This division is now in a period of strong expansion – especially in the development of yarns for the knitting industry.

The reasons behind the growing success of the C & A Yarn Division are threefold:

(1) *Long experience in developing the specialized yarns needed by the company's own textile divisions.*

(2) *Extensive facilities for the research and development of new yarns and new blends.*

(3) *A company policy of going all out to experiment with confined yarns for the specialized needs of its clients.*

The latter point is perhaps the most important of the three. In creating new yarns and new blends, the C & A Yarn Division has been able to tap all the experimental facilities available through the wide-ranging C & A organization. This has given it an enviable reputation for quality and performance which has been a great asset, especially in attracting some of the country's leading fashion knitters.

The fabrics shown in this report are all made with C & A yarn. They represent only a small sampling of the versatility which stems from the company's experimental approach, its willingness to try new things and its determination to make the C & A Yarn Division a leading resource for fashion.

A Company 117 Years Old with its Eyes on the Future

In the year 1843 when John Tyler was president and there were only twenty-six states in the Union, a store was opened on Chatham Street in lower New York. Here window shades, made in Astoria, Long Island, were sold by G. L. Kelty and here began the history of Collins & Aikman, America's largest manufacturers of upholstery fabrics for the automotive, furniture, railroad and aircraft industries.

From this modest beginning, Collins & Aikman has grown greatly in size and in number of products. Its large and modern mills are located in North Carolina, Georgia, California, and in Ontario and Quebec, Canada. While upholstery fabrics accounted for most of its production before 1940, today it produces pile fabrics for men's and women's wear, fabrics for toys, industrial fabrics, and a broad range of yarns for the weaving, knitting, and tufting industries.

Divisions and Products

AUTOMOTIVE DIVISION: Upholstery fabrics for the automotive and aircraft industries. Automotive slip cover fabrics. Weaving plant in Silver City, N. C. Finishing plant in Albemarle, N. C.

CA-VEL DIVISION: Upholstery fabrics for the furniture industry. Toy fabrics. Pile cloakings for men's, boy's and women's wear. Industrial fabrics. Weaving and finishing plant in Ca-Vel, N. C.

YARN DIVISION: Yarns for the knitting, weaving, and industrial trades. Spinning plant in Norwood, N. C.

MAYFAIR DIVISION: Carpets for the transportation industries. Pile fabrics for men's and women's wear. Tufting plants in Dalton, Ga. and Culver City, Calif.

CANADIAN DIVISION: Upholstery fabrics for furniture and transportation industries. Pile cloakings for men's, boys' and women's wear. Toy fabrics. Weaving and finishing plants in Farnham, Quebec, and in Stratford, Ontario.

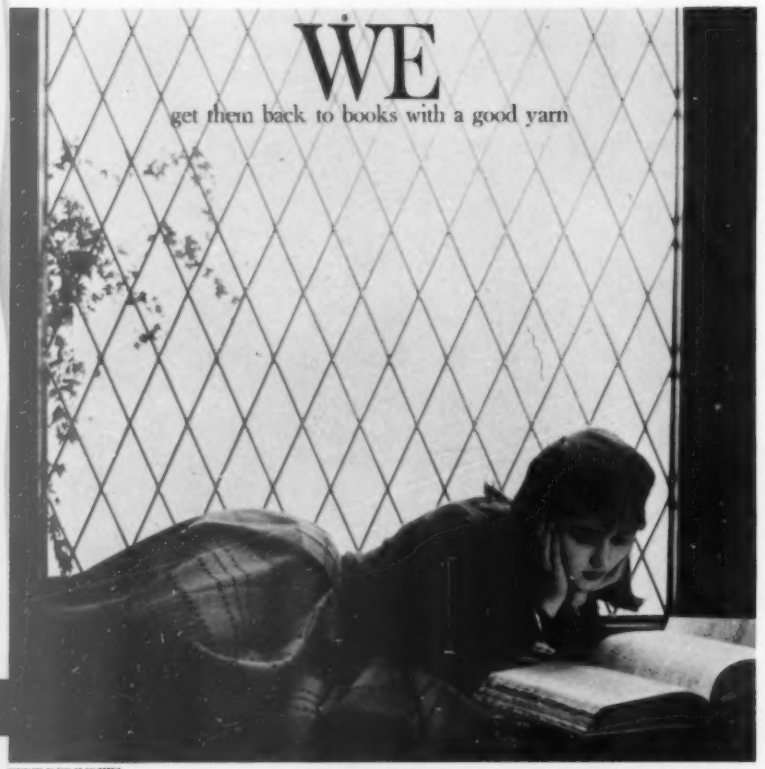
STEAD & MILLER DIVISION: Upholstery fabrics for the furniture trade. Weaving and finishing plant in Concord, N. C.

BANGOR DIVISION: Tricot fabrics & woven lingerie fabrics. Plants at Penn Argyl and Bangor, Penna.

COLLINS & AIKMAN
YARN DIVISION

Makers of upholstery fabrics for the furniture and transportation industries, pile-apparel fabrics, tricot fabrics, industrial fabrics, 100 fabrics and yarns; Collins & Aikman, 210 Madison Avenue, New York 16, New York.

And the reds, greens, golds — any color our C&A yarn men go after. Not the next thing to it, but it. The same is true of texture, weight, surface effect. Haze blue is the hue featured here for dyed-to-match separates by Jerry Roberts, Inc. Both made from a blended C&A yarn of 75% worsted and 25% orlon®. The cowl neck sweater has a wonderful brushed texture contrasted with unbrushed ribbing in collar and sleeves. The pleated plaid skirt fabric by Crestwood. Also in these delectable colors: brown, olive, paprika, green, camel and vanilla. Sizes 8 to 18. Sweater, $10.98. Skirt, $17.98. At Bloomingdale's, New York and branches.



COLLINS & AIKMAN
YARN DIVISION

Makers of upholstery fabrics for the furniture and transportation industries, pile-apparel fabrics, tricot fabrics, industrial fabrics, 100 fabrics and yarns; Collins & Aikman, 210 Madison Avenue, New York 16, New York.

A sweater is nothing like a good yarn for getting carried away to campus in grand fashion. Nobody's better equipped to meet such a challenge than the C&A yarn men. Always ready to put imagination, skill and experience to work, they added a lively enthusiasm and so produced the yarn in this handsome skirt. A pure, all-wool yarn made into incredibly soft fabric by Ehniger Mills, a lavishly cut skirt by Tami of California. Soft as it is, its true secret is a gentle firmness that gives a beautiful body, enduring shape. In mellow fall colors. Sizes 6 to 16, about $18. Matching sweater, sizes 34 to 40, about $10. At Macy's, N. Y.; Carson, Pirie Scott, Chicago; Gimbel's, Phila.

VERSATILITY is the hallmark of the C & A Yarn Division

The illustrations on this page offer further documentation on the versatility which has given Collins & Aikman its unique reputation for custom yarns. C & A has long been known for its pioneer developments in durable, lightweight upholstery fabrics for the transportation industry. More recently it has achieved wide recognition for the unusual textures and the creative approach it has been able to achieve in pile fabrics for the apparel field. Today it is earning new accolades for the contributions it is making through its Yarn Division. The photographs in these pages illustrate the range of its facilities and its accomplishments. All the products shown here were developed from yarns made in the C & A spinning plant at Norwood, N. C.

COLLINS & AIKMAN
YARN DIVISION

Makers of upholstery fabrics for the furniture and transportation industries, pile-apparel fabrics, tricot fabrics, industrial fabrics, 100 fabrics and yarns; Collins & Aikman, 210 Madison Avenue, New York 16, New York.

All the warm shimmering mood of an autumn day is spun into strand after strand of this 100% brushed wool sweater yarn. C&A yarn men seem to have a genius for blending such intangibles into a yarn. Right along with all the qualities that appeal to the senses of touch and sight. And the practical features of long wear and easy, economical cleaning with no loss of shape. All very much present and pleasantly apparent in this Helen Harper sweater with the wonderful chin-high collar. Safari tone, oasis green and other mellow tones. Sizes 34 to 40. About $7.00. Matching plaid skirt, sizes 8 to 16, about $9.00. At Stern Brothers, New York.

Textile Fiber Burning Identification Tests

In textile identification the burning test is the most rapid for obtaining an indication of various fibers' presence. It must, however, be supplemented by other tests, especially where a yarn is blended of two or more fibers.

To make this test, several threads from the warp and filling are unravelled and kept separate. The fibers are twisted together to form a compact strand, which is ignited with a match, which must be brought slowly closer to the strand. Note the characteristics of burning and the rate at which it burns. Extinguish the flame and examine the ash for characteristics and note the odor which the burning produces.

The results of this test may be checked with the accompanying chart tentatively to identify the fibers in the fabric being tested.

Fiber	Class	Burning Characteristics	Odor	Residue
Acetate	Semi-Synthetic	Burns more slowly, melts, or fuses, flame sputters and sparks, pale yellow flame, blue at base.	Acrid (aceric).	Hard, shiny residue, difficult to crush.
Acrylic	Synthetic	Melts then flames, yellow flame, black smoke.	Chemical odor, similar to burnt hair.	Hard ball, can be crushed.
Cotton	Vegetable	Burns rapidly, clear flame, after glow.	Burning paper.	Very little, light.
Cuprammonium	Semi-Synthetic	Burns very rapidly, clear flame.	Burning paper.	Practically no ash.
Dynel	Synthetic	Melts at low temperature even away from flame.	Chemical odor.	Hard bead, cannot be crushed.
Glass	Mineral	Does not burn, melts.	None.	Hard, white bead.
Kapok	Vegetable	Burns rapidly, clear flame, after glow.	Burning paper.	Very little, light.
Linen	Vegetable	Burns at moderate speed.	Burning paper.	Light body as in shape of cloth.
Polyamide	Synthetic	Does not flame, shrinks from flame, self-extinguishing, melts.	Chemical odor, resembling celery.	Hard bead, cannot be crushed.
Polyester	Synthetic	Burns with yellow body and orange tip. Black smoke. Difficult to light and self-extinguishing.	Aromatic.	Bead.
Polyvinyl	Synthetic	Moderately difficult to ignite, self-extinguishing. Burns with bright yellow orange tip.	Hyacinth.	Melts forming bead.
Rabbit Hair	Animal	Burns slowly.	Animal odor.	Bead.
Rayon	Semi-Synthetic	Burns very rapidly, clear orange flame.	Burning paper.	Practically no ash.
Silk	Animal	Burns slowly.	Strong odor of burning feathers.	Small beads, brittle.
Silk, weighted	Animal	Burns very slowly, flame tends to go out.	Similar to silk.	Metal filaments in shape of cloth.
Vinyon N	Synthetic	Melts at low temperature even away from flame.	Chemical odor.	Hard bead, cannot be crushed.
Wool		Burns slowly.	Strong odor of burning feathers.	Large bead or ball brittle, easily crushed.
Wool & Cotton	Animal & Vegetable	Burns quicker than wool, glow similar to cotton.	Pungent animal odor.	Leaves smaller bead than wool.

MOHAIR . . . DACRON . . . WORSTED . . .

THE ART of BLENDING

has been brought to high perfection
in a new TROPICAL SUITING for Men

Every once in a while a truly news-making fabric appears on the men's wear scene. Invariably, its success is based on the quality of its hand and its performance in wear. In the men's wear field the standards of hand and performance are extremely high, and when a fabric measures up to the critical judgement of men's wear fabric experts, it has indeed passed a rigid test. Such a fabric is Molana, a brilliant blend of Mohair, Dacron and Worsted by Stevens for Phoenix Clothes.

Q. *Why Mohair, Dacron & Worsted?*

A. Those who know fine fabrics have always rated the mohair-worsted combination as a superlative men's suiting, with great resilience and a beautiful silk-like hand. The addition of Dacron polyester fiber further improves this blend by giving the weave additional strength, durability and resilience. The actual blend – with slight variations for different types of patterns – consists of approximately 45% mohair, 25% Dacron and 30% worsted.

Q. *What qualities do men look for in a Summer Suit?*

A. There are many different criteria by which different consumers judge a summer suit, but common to all is *lightness of weight* and *resilience* in the fabric. They expect it to look neat, fresh and unwrinkled through the rigors of a hot summer day in the city. They want it to be a garment which literally takes care of itself so they can forget it. Yet at the same time they also want it to feel cool and luxurious to the touch, and with sufficient body to be durable in wear.

Q. *What role does price play in these considerations?*

A. Price is naturally an important consideration. To produce the kind of fabric we are talking about is no challenge if you are thinking about suits which retail at $125 or more. The real challenge is to produce such a fabric in the basic category of the $55 tropical suit.

Q. *How does Molana measure up to these criteria?*

A. We sincerely believe this Stevens fabric meets the test on all levels of performance. Its weight is 8 ounces. It has excellent resilience and crease resistance. It has porosity and body at the same time. It feels cool and luxurious to the touch. It is priced to meet the needs of that growing segment of our population which seeks quality at a sensible price.

Q. *Can Molana take punishment?*

A. Indeed it can. The blend of fibers which go into its construction has been scientifically engineered to give it great durability, excellent tear strength and resistance to abrasion. The use of Dacron fiber is especially important here. Molana is tough. It can really stand up and take punishment.

Molana has high tear strength.

Three Quality Fibers

Mohair – The fleece of the Angora goat is the source of mohair fiber. It originated in Turkey and thrives in South Africa and the Southwestern part of the United States. The fiber has great resilience and excellent tensile strength. It is greatly valued for its distinctive lustre.

Worsted – The distinctive quality of worsted yarns is the tightly spun, smooth surface which results when choice woolen stock is both combed and carded before it is further drawn, drafted, doubled and redoubled in the machines.

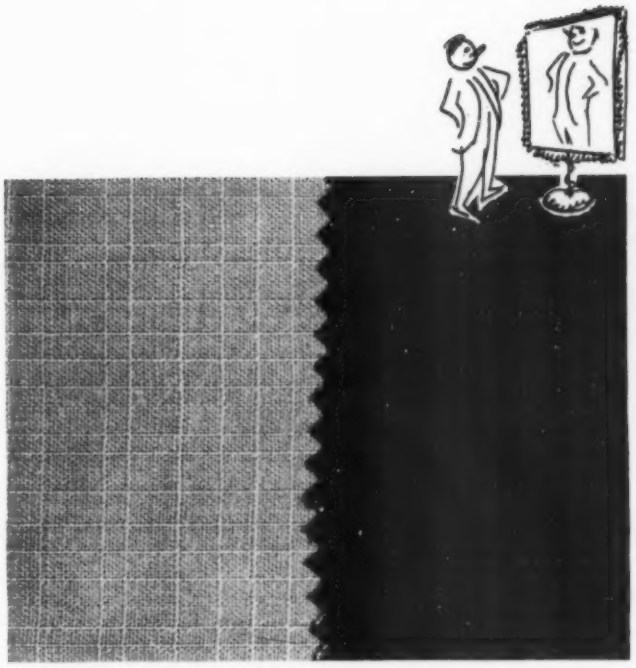
Dacron – DuPont's polyester fiber is now well known for its ability to blend with wool and to give the finished cloth its special characteristics of strength, crease-resistance and dimensional stability.

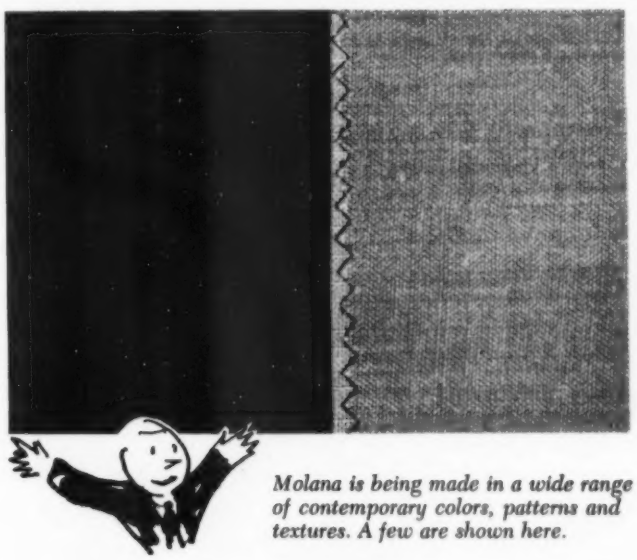
Q. *How is Molana styled?*

A. Stevens designers have created a wide range of fashion colorings and patterns. There is variety to satisfy the tastes of both conservative and high fashion consumers. As to Phoenix tailoring, it is equally varied and lives up to the company's outstanding reputation for quality and style.

Q. *How will Molana be promoted?*

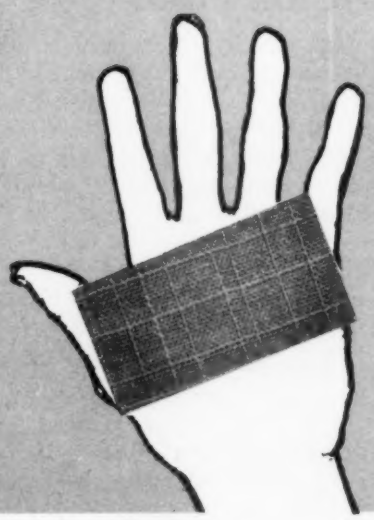
A. A comprehensive program of consumer and trade advertising will tell the Molana story to a wide audience with all the impact of a major, full-space magazine and newspaper campaign. Special labels and pocket tabs will carry the advertising message to the point of sale and retailers will be given every assistance in making Phoenix Molana one of the leading summer suits in the market.



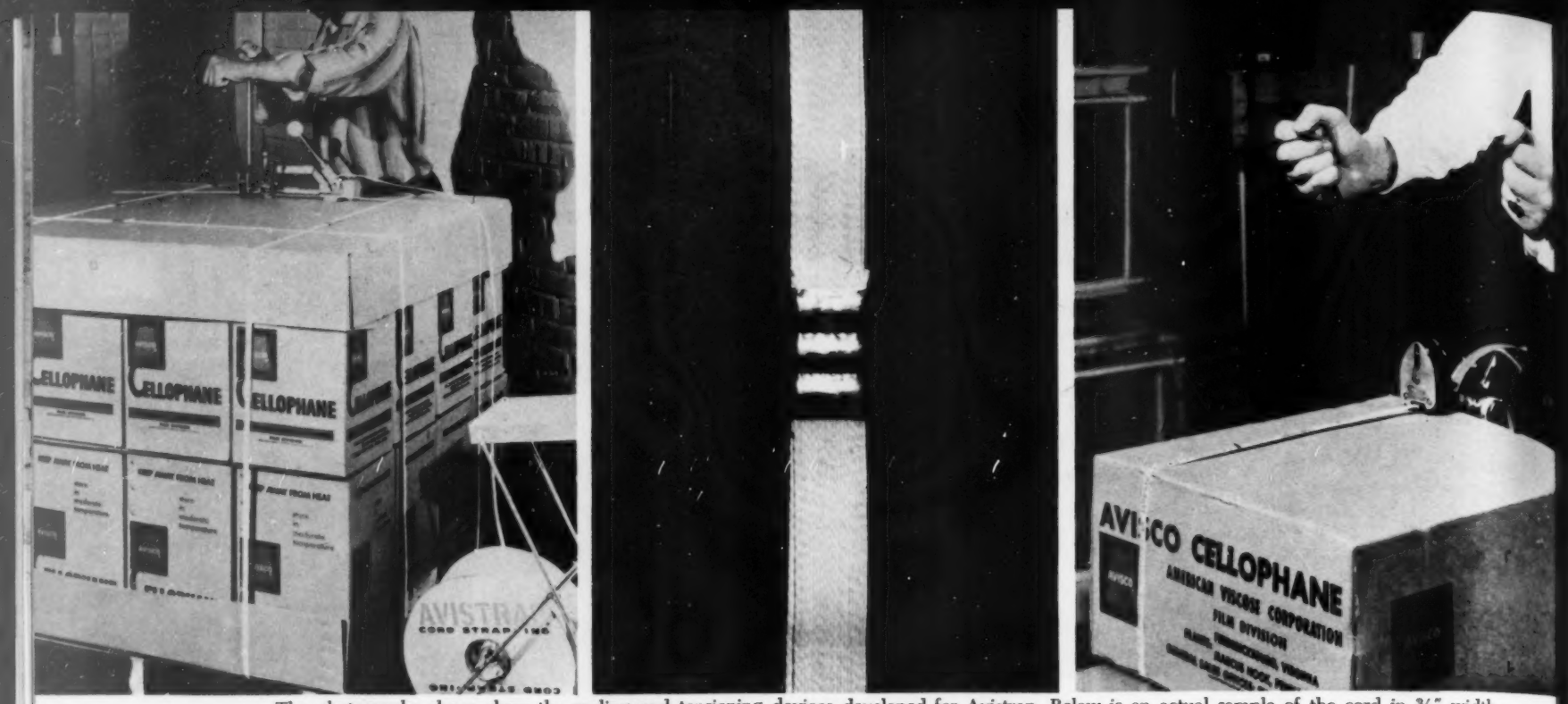


Molana is being made in a wide range of contemporary colors, patterns and textures. A few are shown here.

MAKE the MOLANA CRUSH PROOF TEST YOURSELF



Crush this actual sample of *Molana.* Then open your hand and smooth out the fabric. Note how it defies wrinkles. This resilience gives the *Phoenix Molana* suit its well-groomed look. It will stand up beautifully to the rigors of wear and summer humidity.



The photographs above show the sealing and tensioning devices developed for Avistrap. Below is an actual sample of the cord in ¾" width.

NEW USE FOR A BASIC FIBER

American Viscose has developed high tenacity rayon cord into a new package strapping material with many advantages over other materials now being used.

THERE'S A NEW USE for a textile product – and this just-developed rayon application shows once again why managements today are placing such strong emphasis on their research and development divisions.

The new item, introduced this year, is a high-tenacity rayon cord which has been developed as a new strapping material for all types of packaging, shipping, and material handling.

It is called "Avistrap."

On the lookout for a packaging material that would solve its own shipping problems for its rayon and cellophane products, American Viscose found the answer early this year. Within a few months it had established its own Industrial Packaging Department and launched "Avistrap" Cord Strapping as the new unit's first product.

Advantages Over Present Materials

Avistrap has the advantages of economy, ease of handling, and safety with ample strength for many industrial applications. In addition it weighs ¼ to ⅐ as much as steel strapping of comparable width, a factor which sharply reduces shipping costs because lighter weight cartons – and thus less expensive ones – can be used.

The initial cost of Avistrap and the newly developed strapping tools is lower than other materials and is therefore adaptable to small shipping operations. The material is easy to handle since a coil of Avistrap, complete with disposable spool, weighs approximately 21 lbs., as against 100 lbs. for a coil of steel strap of equal yardage.

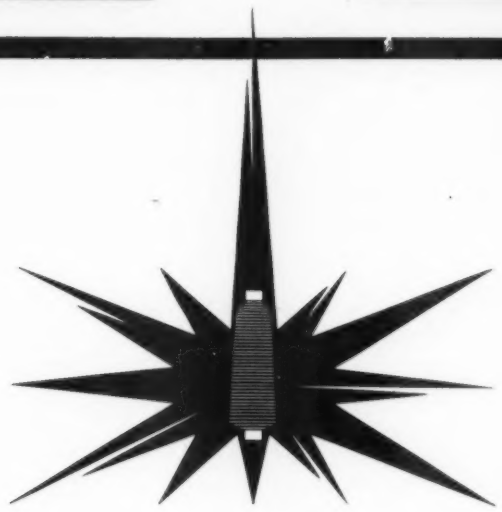
Since it is a textile, Avistrap has no sharp edges and if overtensioned it does not lash out with jagged ends. Damage to cartons and/or contents is also greatly reduced because this highly-flexible cord tightens around corners without cutting cartons, plus the fact that the material will not rust or discolor either containers or contents. Another advantage of Avistrap is that it can be printed with company or product name at low cost.

Will Soon Be Made in Colors

Technically, Avistrap is high-tenacity rayon cord blended with a plasticizer. The number of cords per strap, which come in widths of ¼" to ¾", determines the tensile strength, which averages 30 lbs. per cord. There are 8 strands, or cords, in ¼" strapping and 24 strands in ¾" material. Waterproofing of Avistrap has already been developed on a pilot plant basis, and it is expected that this feature will be incorporated in all the material in the near future. In addition, the strapping will soon be offered in several basic colors as an important aid in identification and stock control.

Avistrap thus represents a new use for an existing textile, with many advantages over other materials now used in this field. For American Viscose it is a new product, and reflects the company's successful efforts to diversify its line and to find new uses for existing textile materials through a creative research and development program.

FROM ITALY



A Unique Man-Made Polypropylene Fiber

MERAKLON®

Low in cost, high in performance, this new fiber results from the transformation of a by-product of the oil refining process. It was pioneered and developed by the world renowned Italian scientist, Giulio Natta and by Italy's giant chemical — mining company,

MONTECATINI

AN AF MARKETING REPORT on the properties, virtues, and end uses of fabrics made from the polypropylene fiber Meraklon and the extensive facilities for marketing the fiber which Montecatini is establishing here in the United States.

®MONTECATINI REGISTERED TRADEMARK

WHY POLYPROPYLENE?

The announcement of a new man-made fiber naturally provokes questions. Textile men ask: "Why another man-made fiber? What advantages does Meraklon offer over other fibers now on the market?" . . . The answers are quickly given. Meraklon performs as well as other man-mades in most areas and better in some. On top of this it is low in cost. Its raw material is readily available, it is simple to produce and it gives a high covering factor per pound. These factors all contribute to its current price of 60 cents a pound on the Italian market and this figure is expected to drop as production increases. The economics of Meraklon are based on the fact that its raw material (propylene gas) is a by-product of the oil-refining process.

CHARACTERISTICS OF MERAKLON

Either alone or in blends with natural fibers Meraklon has these outstanding qualities:

1. Lightest fiber in existence (0.91), resulting in high cover factor efficiency and exceptionally lightweight fabrics.

2. High tensile strength.

3. Excellent resistance to abrasion.

4. High wrinkle-resistance.

5. Excellent dimensional stability. Good elasticity.

6. Easy to clean. Excellent washability. Dries quickly.

7. High resistance to acids and alkalies.

8. Insulates better than wool.

9. Natural static electricity is reduced to such low limits that processing becomes easy and smooth.

10. Available in a wide range of melt dyed colors. Good fastness at low cost.

11. Impervious to micro-organisms and insects.

12. Pilling of no relevance.

MERAKLON POLYPROPYLENE – VERSATILE LOW COST FIBER TAILORED FOR END USE

MERAKLON POLYPROPYLENE FIBER is the most recent addition to the list of brilliant contributions which chemistry has made to the textile industry. In this case the credit goes to the Italian chemical firm of Montecatini and to Professor Giulio Natta, one of the world's leading scientists.

World-Wide Interest

It was Prof. Natta, working closely with the chemists at Montecatini, who made the basic scientific discoveries which resulted in the substance known as isotactic polypropylene. The unique properties and low cost of this new product have generated a great deal of scientific and commercial interest throughout the world since it is adaptable not only to fibers but also to the vast, expanding field of plastics, films and synthetic rubbers. As a result, large scale production of polypropylene is now underway not only in Italy but also in the United States. Other world-wide developments are blossoming out of the Italian discovery, but the first tested fabrics, plastics, fibers, and elastomers and the major experimentation were done by Montecatini.

Lowest-Priced Raw Material

The word polypropylene is still relatively unfamiliar to the textile industry but there is every reason to believe that it will shortly be as well known as the words polyamide, polyester and acrylic. Polypropylene fibers are obtained from propylene gas which is a by-product of the oil refining process. As such it is the lowest priced raw material which can be polymerized and transformed into textile fibers.

Properties Can Be Pre-Determined

Chemically, Meraklon polypropylene belongs to the group of fibers which derive from polyhydrocarbons (olefins). Their polymerization is the result of Prof. Giulio Natta's original research on "stereo-specific" methods by which he has achieved a regular order in polymer structures. The catalysts used are particularly efficient in effecting selective polymerization. As such they may be usefully employed to predetermine the structure and consequent properties of the resulting polymers. This has great commercial importance.

In the past, synthetic materials were produced with certain inherent properties and the problem was then to find suitable applications to which these properties would be adaptable. But with Prof. Natta's discoveries, the process is just the reverse: it now becomes possible to tailor the polypropylene material from its inception to fit the specifications of a particular product category.

Production and Marketing

The commercial possibilities of this new discovery are demonstrated by the fact that in the town of Terni, Italy, Montecatini has built a Meraklon production unit with an initial yearly capacity of 12 million pounds of staple and filament. This will be increased gradually to reach an annual capacity of 60 million pounds by 1962. The Terni plant is operated by the Polymer Company of Italy, an associate firm of Montecatini.

In the United States, Montecatini has set up its wholly owned subsidiary company – the Novamont Corporation – which is building a major polyolefin plant at Neal, W. Va. near Ceredo-Kenova. Here the Montecatini polypropylene plastic, known as "Moplen,"® will be produced as well as other products, possibly including Meraklon. The Neal plant will be in production by early 1961 and will have a productive capacity of 25 million pounds of polypropylene a year.

The marketing of Meraklon in the United States is being handled exclusively by the Chemore Corporation in New York City, general representative of Montecatini in the United States. This organization is being staffed with experts who have wide experience with the fiber and its applications and will be in a position to offer American users of Meraklon full technical know-how and experimental facilities.

The Many Uses of Meraklon

The outstanding properties of Meraklon make it suitable for a wide range of end uses. Because it is so light in weight, the same weight of Meraklon yields higher yardage of fabric than any other known fiber.

It has high tensile strength and wrinkle resistance, as well as outstanding resistance to abrasion, chemical agents, mold and insects. It resists soiling, is easily cleaned and works well through all the stages of production.

All the above features of Meraklon, coupled with its low price, have generated world-wide interest among producers of such diverse products as industrial fabrics, transportation fabrics, carpetings and rugs, up-

®MONTECATINI REGISTERED TRADEMARK

PROF. GIULIO NATTA

PROF. NATTA'S ACHIEVEMENT. The scientific breakthrough which resulted in Meraklon is the achievement of Professor Giulio Natta of the Polytechnic Institute in Milan, Italy. After years of basic research he discovered what he has named the "isotactic" structure in polymers made from olefins which are derived from the refining of petroleum. This work was further developed at the Montecatini laboratories. Its significance hinges on the fact that Prof. Natta's discoveries make it possible to control the properties of polypropylene during the process of polymerization. Thus it becomes practical to custom-design the structure and properties of Meraklon in advance for particular end uses. Prof. Natta's discoveries have also fathered Montecatini's versatile plastic "Moplen," and several elastomers.

holstery and drapery cloths, blankets, apparel fabrics in both woven and knitted women's and men's wear. Successful experimental fabrics have already been made in all these fields and new end uses are being continually researched and developed.

Versatility in Blended Fabrics

The properties which give fabrics of 100% Meraklon their outstanding qualities are equally advantageous in blends of polypropylene with other fibers. It blends well with both natural and man-made fibers.

In blends with low-quality wool, for example, the use of Meraklon makes its possible to produce low-priced fabrics with high mechanical and wear properties as well as a pleasant hand and good draping capacity comparable to fabrics made with top-quality wools. When it is blended with high-quality wool, it adds lightness to the fabric and makes possible a reduction in cost without any reduction in the properties of quality wool.

The Hand of Cotton and Silk

Meraklon has proved to be interesting when manufactured into cotton-like fabrics such as flannels, prints, upholstery and drapery fabrics and knitwear. In these areas Meraklon offers superior mechanical qualities and an excellent feeling of comfort in wear – a consideration which ranks high in the consumer's mind. It has produced equally interesting results when manufactured into silk-like fabrics, both woven and knitted, for underwear, high-fashion apparel, and draperies.

The fiber is available in an almost unlimited number of melt dyed colors with exceptional fastness at low cost. A polymer directly dyeable both pure and in blends will soon be offered to the market.

An Expanding Future

When all the factors outlined here are added together it becomes clear that Meraklon polypropylene fiber is due for rapid expansion in the textile field. It was justifiable pride which prompted Dr. Piero Giustiniani, the Managing Director of Montecatini, to say recently: "It is a great satisfaction for us technical people to be able to state ever more strongly to the world that we are able to meet the vital necessities of mankind by making available items of mass production, obtainable in any amount with equipment which is constantly more perfect, and from raw materials which, at least at the present time, do not appear to be diminishing."

The photograph above shows one of Montecatini's petrochemical installations which produces the propylene gas from which Meraklon is made.

(please turn)

POLYPROPYLENE FABRICS MADE IN ITALY SHOW MERAKLON'S GREAT VERSATILITY

U. S. FABRICATIONS SOON TO COME

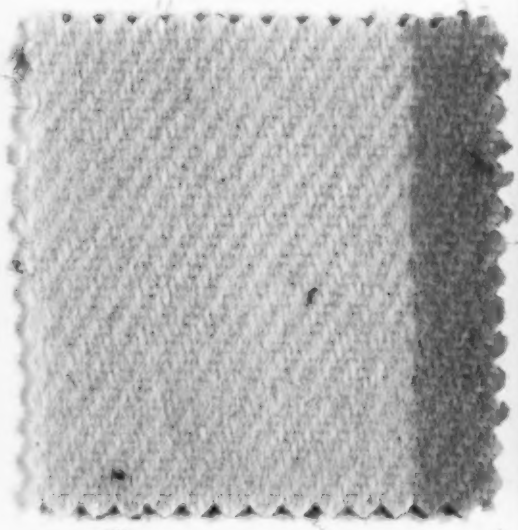
The whole development of Meraklon polypropylene fiber is only six years old. It is therefore understandable that the full range of fabrications possible with Meraklon is not yet in commercial production. Fabrics shown here are experimental ones produced and tested for the Italian market where they have been widely acclaimed for their low cost and superior performance. Montecatini is, of course, a producer of fiber and not of finished fabrics.

American weavers are already experimenting with pure Meraklon as well as with Meraklon blends in order to meet the special needs of American consumers, particularly in the field of lightweight fabrics which have already found an important and growing audience.

55% Meraklon is blended with 45% wool in a colorful plaid for all types of apparel.

A wide range of wool-like fabrics *(above)* have been made with pure polypropylene.

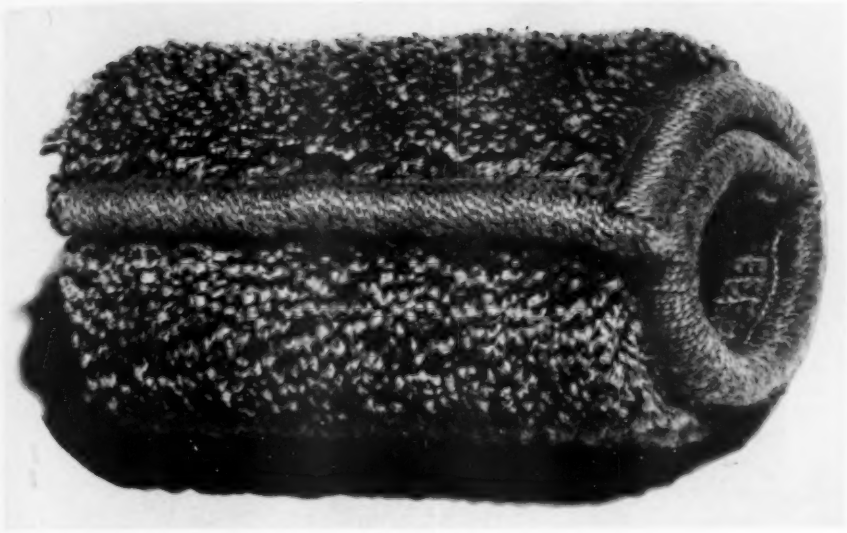
100% Meraklon in a rugged upholstery cloth for the furniture and transportation fields.



Blanket fabric of 100% Meraklon is extremely lightweight, warmer than wool.

LIGHTWEIGHT FABRICS. Meraklon's unusually low specific gravity (0.91) makes it the lightest weight fiber presently available. This property is demonstrated in the fabrics swatched here which are lighter in weight than comparable constructions made with other fibers. The result is an economic gain, since Meraklon gives a greater material yield per pound of filament than other fibers. For example, a fabric made from Meraklon will use 30% less fiber than a comparable fabric made from wool — resulting in a lower overall cost.

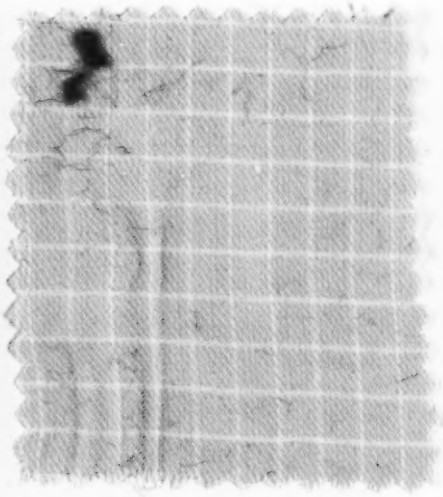
The wide range of polypropylene fabrics swatched and photographed on these pages demonstrate the variety, attractive appearance, excellent hand and body of fabrics made with Meraklon fiber. All these fabrics and many more are now in production in Italy as well as in other countries.



Photograph of a 100% Meraklon rug notable for light weight, strength, resilience.

A plush fabric, designed for the upholstery trade, is 56% Meraklon-44% cotton.

Lightweight slubbed men's summer suiting of 45% Meraklon blended with 55% wool.



100% Meraklon is used in this sport shirting and dress fabric with a wool-like hand.

A women s coating-weight cloth woven from a blend of 30% Meraklon and 70% wool.

U. S. HEADQUARTERS FOR MERAKLON FIBER IS CHEMORE CORP.

In the United States Montecatini's Meraklon fiber is sold exclusively through the Chemore Corporation in New York City. Here, technical representatives from the Terni plant in Italy will be members of the staff, ready to give American users of the fiber the full benefit of the extensive experimentation conducted in Italy over the past six years. The New York Office will also include an extensive marketing staff. Its files contain over 100 examples of fabrics made entirely of polypropylene as well as blends with natural and man-made fibers. The range covers every field of textile use. In the U.S. a well-rounded Meraklon merchandising program will be built on quality control from fiber to finished fabric in order to protect the profits of conscientious weavers, knitters, converters, cutters and retailers.

MONTECATINI — ITALY'S BIGGEST IN MINING, CHEMICALS AND PLASTICS

THE MONTECATINI CREDO:

"This is a Chemical Age — an Age in which ever new and more pressing demands are made on industry by modern life. Industry is helped in its task by the continual progress of scientific discovery and technical development which, in turn, it must encourage to still further efforts through research. Every other branch of production has come to depend directly upon the progress of the Chemical Industry. It has indeed become the key industry of modern times. The degree of civilization of a country, its very position and political influence in the world, are best judged by the development and efficiency of its Chemical Industry. Montecatini is animated by a constant desire for improvement. It sees itself as one of the fundamental supports of Italy's national economy and one of the largest organizations in the world concerned with the advancement of industrial progress for the benefit of Mankind."

Montecatini office in Milan.

THE MONTECATINI GROUP, headed by Count Carlo Faina, is today one of the top ten chemical companies in the world and the largest organization of its kind in Italy. 72 years ago it was founded to exploit a small copper mine near the little village of Montecatini Val di Cecina in Tuscany – hence its name. During the intervening years it has expanded with the industrial growth of Italy until today it operates 160 plants, mines, laboratories and power stations, employs over 60,000 people, and its markets extend the world over.

A Vast Range of Products

Montecatini products include fertilizers, fungicides, insecticides, chemicals for industry (such as acids, alkalies, solvents, etc.), petrochemicals, natural gas derivatives, dyestuffs and intermediates, pigments, paints and varnishes, resins, plastics, synthetic fibers, pharmaceuticals and fine chemicals, explosives, glues and adhesives, aluminum, zinc, lead, cast iron, rare metals, various minerals, marbles, electric power. The company has earned the respect of world industry for its engineering ingenuity. Fauser-Montecatini plants, for example, produce 19% of the world's primary nitrogen and are located in 27 countries, including the U. S.

A Firm Base of Research

The Managing Director of the Montecatini Group – Dr. Piero Giustiniani – is himself a scientist and the whole structure of the organization is built on the belief that continuing basic research is the key to growth.

Montecatini supports 16 laboratories in Italy for both fundamental and applied research. Here more than 1500 scientists, engineers and technicians are engaged in broad chemical and metallurgical development programs. In addition, the company sponsors extensive research programs under the direction of leading Italian scientists in Italy's universities and special schools.

• • •

It was from such sponsorship and from this faith in the value of fundamental research that the discoveries of Prof. Natta emerged. For many years Montecatini has supported a research project at the Institute of Industrial Chemistry at the Polytechnic of Milan. Under Prof. Natta's direction, more than one hundred scientists and technicians have been working on the theory and practice of polymer chemistry. Out of this work has come the major scientific breakthrough whose first commercial results are Meraklon polypropylene fiber and the polypropylene plastic, Moplen. There is every reason to believe that still other end products will soon be developed on the strength of this research.

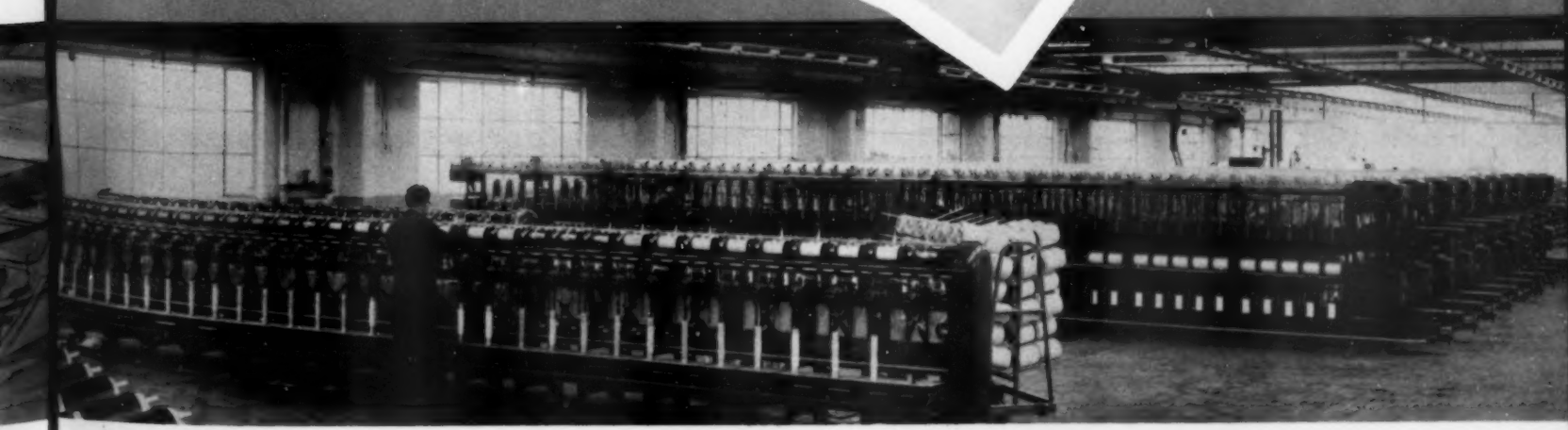
An Enlightened Employee Service

No small part of Montecatini's growth and standing on the world industrial scene is due to the enlightened approach it has developed towards its huge working force. Alongside its technical and scientific progress the company has sponsored comprehensive plans for its 60,000 employees and their families. These include medical and health services, training schools, recreation facilities, nurseries, pension plans, housing and many other benefits. This broad program is directed to achieve what Montecatini has described as its ultimate goal: "To assure, for its workers, economic security, a care-free old age and, above all, the fullest expression of their personality in the sphere of the working community to which they belong."

Architect's drawing shows the Neal, W. Va. polyolefin plant of the Novamont Corporation, a wholly-owned subsidiary of Montecatini. This unit will be in production by 1961 with a capacity of 25 million lbs.

Founded in 1888 as a small copper mining company, Montecatini is now Italy's biggest in mining, chemicals and plastics including fiber derivatives, operating 160 production units, several important research centers and employing over 60,000 people.

160
UNITS
in the
MONTECATINI
GROUP
les • Dyestuffs • Chemicals for agricul-
and industry • Pharmaceuticals • Non-
ous metals • Power stations • Research
tutes • Mines • Quarries • Saw mills •
thetic Nitrogen • Hydrocarbons •



Spinning room at the new Meraklon plant in Terni, Italy. This unit is expected to have an annual capacity of 60 million lbs. by 1962. It is operated by the Polymer Co., a Montecatini associate.

THE MANY USES OF MERAKLON:

100% MERAKLON:

Carpets, upholstery and transportation fabrics, blankets, drapery, heavy apparel cloths.

WOOL BLENDS:

Meraklon to improve wear and reduce felting.

Meraklon in hosiery.

Meraklon to improve low-grade short wools.

Meraklon for permanently pleated fabrics.

WORSTED BLENDS:

Meraklon for tropical weight apparel fabrics.

Meraklon for strength.

Meraklon for hosiery and knitted underwear.

INDUSTRIAL FABRICS:

100% Meraklon in filter fabrics, oil seed press filters, ropes, felts for paper making (with wool), work clothes and overalls of all types.

COTTON & RAYON BLENDS:

All types of fabrics where cotton and rayon are now used. Valuable for strength, insulation, comfort, wrinkle-resistance, easy washing and drying, resistance to mold and moisture.

AN EXPANDING FUTURE FOR MERAKLON FIBER IN ALL BRANCHES OF TEXTILES

The name MERAKLON was suggested by a star. One of the seven stars in the Big Bear (Ursa Major) is called MERAK. Two syllables. Plus a third — LON — which has the flavor of the laboratory. MERAKLON is indeed a new star on the textile horizon. Six years of basic research went into its development and its design drew on the vast experience of Montecatini laboratories over the past two decades in perfecting new synthetic fibers to meet the ever-increasing needs of a growing world population. Its great versatility and low cost will guarantee for it a firm position and an expanding future in the world of textiles.

A NAME SUGGESTED BY A STAR

IN THE UNITED STATES, Meraklon fiber is sold exclusively by the Chemore Corporation at 2 Broadway in New York City. IN ITALY, Meraklon is produced by the Terni plant of the Polymer Corporation, a subsidiary of Montecatini whose head offices are in Milan.

WELL-KNIT COMPLIMENTS — **PETITE LADY** is first to flatter the half-sizes with fashion's great new textured knit of **80% Creslan acrylic fiber, 20% nylon.** Creslan gives these born travelers new color vibrancy, new washing ease, new resiliency that keeps them young and shapely. Sizes 12½ to 22½, about $25. Cyanamid makes the Creslan acrylic fiber; Petite Lady makes the fashions. American Cyanamid Company, New York.

CYANAMID

Cibacron Dyes

The range of Cibacron® Dyes can well be considered as a king-size palette . . . the practical, working link between the designer's inspiration and its multiple reflection . . . faithfully reproduced time, after time, after time. Cibacron Dyes bring living, lasting and limitless colors to the world of fashion. Exciting multichromatic effects in textile printing assert the designer's creative talents with distinctive beauty □ The result of intensive CIBA research and development, Cibacron Dyes are fiber-reactive . . . provide outstanding fastness to light and washing.

No. 51 Fall-winter 1960 Home Econ Dept.

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1960-61

AMERICAN FABRICS MAGAZINE WORLD-WIDE DIRECTORY OF

MAN-MADE FIBER BRAND NAMES

This careful and up-to-date directory reveals the vast and continuing growth of the man-made fiber industry throughout the world. The listing covers all U.S. brands by types, together with their producers. It also lists the major foreign producers of man-made fibers and their brand names.

A spinneret in operation at Eastman shows how chemicals are extruded through tiny holes to emerge and be formed into continuous filaments.

U. S. MAN-MADE

AIR REDUCTION CHEMICAL CO. — 150 East 42 St., N. Y. C.
ALLIED CHEMICAL CORP. — Fibers Div., 261 Madison Ave., N. Y. C.
AMERICAN CYANAMID CO. — 30 Rockefeller Plaza, N. Y. C.
AMERICAN ENKA CORP. — 350 Fifth Ave., N. Y. C.
AMERICAN SILK MILLS — 1400 Broadway, N. Y. C.
AMERICAN VISCOSE CORP. — 1617 Penn. Blvd., Phila., Pa.
AVISUN CORP. — 1608 Walnut St., Phila., Pa.

JOSEPH BANCROFT & SONS CO. — Wilmington, Del.
BEAUNIT MILLS, INC. — 261 Fifth Ave., N. Y. C.
BIGELOW-SANFORD CO. — 140 Madison Ave., N. Y. C.
BOLTA PRODUCTS — Div. of Gen. Tire & Rubber Co., 349 Fifth Ave., N. Y. C.

CELANESE CORP. OF AMERICA — 180 Madison Ave., N. Y. C.
CHADBOURN GOTHAM SALES CORP. — 401 Fifth Ave., N. Y. C.
CHEMORE CORP. — 2 Broadway, N. Y. C.
CHEMSTRAND CORP. — 350 Fifth Ave., N. Y. C.
COURTAULDS (ALA.) INC. — 600 Fifth Ave., N. Y. C.

DARLINGTON FABRICS CORP. — 350 Fifth Ave., N. Y. C.
DAWBARN BROTHERS INC. — Waynesboro, Va.
DEERING MILLIKEN RESEARCH CORP. — 1045 Sixth Ave., N. Y. C.
DOW CHEMICAL CO. — Textile Fibers Dept. and Dobeckmun Division, 350 Fifth Ave., N. Y. C.
DUPLAN CORP. — 1407 Broadway, N. Y. C.
E. I. DUPONT DE NEMOURS & CO. INC. — 350 Fifth Ave., N. Y. C.

EASTMAN CHEMICAL PRODUCTS INC. — 260 Madison Ave., N. Y. C.

FAIRTEX CORP. — Charlotte, N. C.
FERRO CORP. — Nashville, Tenn.
FILATEX CORP. — Waxhaw, N. C.
FIRESTONE TIRE & RUBBER CO. — Velon Plastics Div., 45 Rockefeller Plaza, N. Y. C. Rubber & Latex Div., 28 West End Ave., N. Y. C.

HARTFORD FIBRES CO. — 140 Madison Ave., N. Y. C.
HEBERLEIN PATENT CORP. — 350 Fifth Ave., N. Y. C.
HEMMERICH CORP. — Denver, Pa.

Steps in formation of Dynel show (left to right) resin which is extruded to form tow, then cut into staple and crimped, then spun into yarn.

FIBER PRODUCERS

INDUSTRIAL RAYON CORP. — Union Commerce Bldg., Cleveland, Ohio

JOHNS-MANVILLE SALES CORP. — 270 Madison Ave., N. Y. C.

LEESONA CORP. — Providence 1, R. I.
LEON-FERENBACH, INC. — 274 Madison Ave., N. Y. C.

MADISON THROWING CO., INC. — 350 Fifth Ave., N. Y. C.
MALINA COMPANY — 125 West 41 St., N. Y. C.
MARIONETTE MILLS — Coatesville, Pa.
METAL FILM COMPANY — 40 Worth St., N. Y. C.
METLON CORP. — 432 Fourth Ave., N. Y. C.
CLARENCE L. MEYERS & CO. — 450 Seventh Ave., N. Y. C.
MOHASCO INDUSTRIES INC. — New Bedford, Mass.
MULTITEX CORP. — Newark, N. J.

NATIONAL PLASTIC PRODUCTS CO. — Odenton, Md.
NATIONAL SPINNING CO., INC. — 350 Fifth Ave., N. Y. C.
NEW BEDFORD RAYON CO. — New Bedford, Mass.

OWENS-CORNING FIBERGLAS CORP. — 717 Fifth Ave., N. Y. C.

PILOT MFG. CO. — Pilot Mt., N. C.
PITTSBURGH PLATE GLASS CO. — Pittsburgh, Pa.
POLYMERS INC. — Middlebury, Vt.

REEVES BROS., INC. — 1071 Sixth Ave., N. Y. C.
REYNOLDS METALS CO. — 19 East 47 St., N. Y. C.

SOUTHERN LUS-TRUS CORP. — Jacksonville, Fla.
SPUNIZE CO. OF AMERICA INC. — Unionville, Conn.
STANDARD YARN MILLS — Woodside 77, N. Y.

TENNESSEE EASTMAN CORP. — Kingsport, Tenn.
TEXTURED YARN CO., INC. — 40 East 34 St., N. Y. C.
TYREX, INC. — 350 Fifth Ave., N. Y. C.

UNION CARBIDE CORP. — 100 East 42 St., N. Y. C.
U.S. RUBBER CO. — 1230 Sixth Ave., N. Y. C.

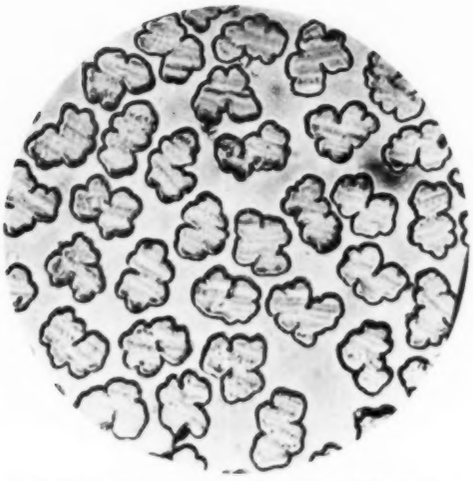
UNITED STATES

ACETATE

NAME	TYPE	PRODUCER
Acele	Acetate filament	DuPont
Arnel	Triacetate fiber — filament and staple	Celanese
Arnel 60	Filament and staple	Celanese
Avisco Acetate	Acetate — filament and staple	American Viscose
Celacloud	Crimped staple for batting, nonwoven fabrics	Celanese
Celafil	Staple for comforters, pillows	Celanese
Celaire	Acetate staple for carpets	Celanese
Celaloft	Filament yarn, bulked for draperies, etc.	Celanese
Celanese	Acetate — filament and staple	Celanese
Celaperm	Acetate core fiber with 20% saponification to give surface of viscose	Celanese
Celaspun	Yarn from staple stock	Celanese
Celatow	Tow for cigarette filters	Celanese
Celatress	Acetate filament for artificial hair	Celanese
Chromspun	Acetate, solution dyed	Eastman
Color-Sealed	Acele filament yarn, solution-dyed	DuPont
DuPont	Acetate filament yarn	DuPont
Eastman 50	Highly bulked filament yarn	Eastman
Estron	Filament yarn; staple for cigarette filters	Eastman
Heatherloft	Multicolor carpet yarn lofted filament	Eastman
Lanese	Acetate staple fiber	Celanese
Quilticel	Bonded acetate staple, in batting form	Celanese
Thick-and-Thin	Random-flaked filament yarn	DuPont
Types F and K	Acetate staple	Celanese

ACRYLIC

A-Acrilan	Acrylic fiber	Chemstrand
Acrilan 16	Acrylic staple fiber	Chemstrand
Creslan	Acrylic fiber	American Cyanamid
Orlon	Acrylic fiber	DuPont
Orlon Cantrece	Continuous filament used in Taslan process	DuPont
Orlon types:		
21	High bulk tow and staple with reversible crimp for worsted system	DuPont
25	Staple and tow for blending with rayon, cotton	DuPont
37	Carpet staple and tow	DuPont
38	High shrinkage tow for deep pile fabrics	DuPont
39	Staple stock spun on woolen system	DuPont
42	High bulk staple and tow	DuPont
Vybran	Yarn spun from Orlon 21	National Spinning
Zefran	Staple fiber designated as Nitrile Alloy	Dow Chemical



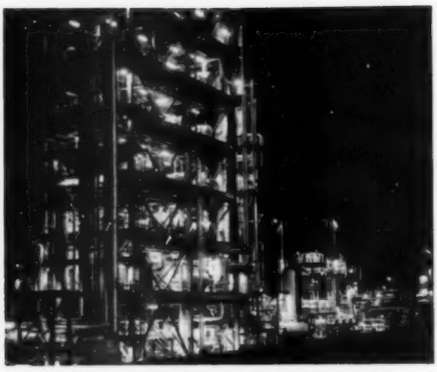
Cross section of acetate magnified 500 times.

GLASS

Aercor	Fiberglas yarns with air-bulked treatment	Owens-Corning
Fiberglas	Glass yarn for curtaining and industrial uses	Owens-Corning
Fiberglas Coro-dyed	Pigment-dyed glass fibers for decorative fabrics	Owens-Corning
PPG	Glass yarns for curtains and drapes	Pittsburgh Plate Glass
Unifab	Woven glass fabric for boats, industrial uses	Ferro Corp.
Uniformat	Chopped glass fibers in mat form for binder	Ferro Corp.
Unirove	Glass fibers in roving	
Vitron	Glass fiber yarn for industrial uses	Johns-Manville

METALLIC

Alistran, Durastran	Cellophane-laminated foil yarn	Multitex Corp.
Chromeflex	Non-tarnishable aluminum yarn laminated with Mylar polyester	Metal Film Co.
Chromeflex NL	Polyester metallized yarn, not laminated	Metal Film Co.
Fairtex	Metallic fiber of aluminum foil and acetate-butyrate or Mylar	Fairtex Corp.
Lamé	Non-tarnishable metallic yarn of acetate-butyrate laminated to aluminum with color	Standard Yarn Mills
Lurex	A group of non-tarnishable yarns aluminum	Dobeckmun
Malora	Acetate-butyrate coated metallic yarn, or one with coating of Mylar	Malina Co.
Metlon	Aluminum foil between two plies of plastic film	Metlon Corp.
Mylar	Transparent polyester film laminated to itself with metallic deposit	DuPont
Reymet	A group of fibers made of Mylar laminated to aluminum.	Reynolds Metals
Ultravat	Polyester coated metal yarn resistant to light fading.	Metlon Corp.



Olefin production unit at Montecatini.

MODACRYLIC

Dynel	Copolymer of acrylonitrile and vinyl chloride	Union Carbide
Verel	Modified acrylonitrile	Eastman

NYTRIL

Darvan	Made from vinylidene-dinitrile	Celanese
Darvan X-7	Staple known for its good dyeing properties	Celanese

OLEFIN (Polypropylene and Polyethylene)

DLP-2	High-tenacity polyethylene monofilament. Used in cordage, rope.	Dawbarn
DLP-3	Polyethylene ribbon-type yarn for seat covering.	Dawbarn
DLP-51	Polypropylene monofilament, used for outdoor furniture, etc.	Dawbarn
DLP-61	Polypropylene high-tenacity yarn, stabilized to sunlight and heat. Used for cordage, rope.	Dawbarn
DLP-71	Polypropylene ribbon-type yarn	Dawbarn
Fiber B	Polypropylene multi-filament yarn	Union Carbide
Lus-Trus	Monofilament yarn in the olefin group	Southern Lus-Trus
Meraklon	Polypropylene fiber for home, industrial and apparel fabrics	Chemore Corp.
Orlane	Polypropylene continuous filament and staple	AviSun Corp.
PEX	Polyethylene monofilament used in brushes	Polymers, Inc.
Prolene	Polypropylene multifilament staple, tow, and yarn	Industrial Rayon
Reevon	Polyethylene monofilaments of heavy denier	Reeves Brothers
Royalene	A group of polypropylene and polyethylene monofilaments	U.S. Rubber
Velon LP	Linear polyolefin monofilaments for transportation fabrics, etc.	Firestone
Velon PS	Polypropylene monofilaments for webbings	Firestone

POLYAMIDE (NYLON)

Antron	Nylon with a tri-lobal cross section	DuPont
Caprolan	Polycapramide nylon filament, staple, and tow	Allied Chemical
C-Chemstrand Nylon	Type 6	Chemstrand
Cumuloft	Textured carpet yarn	Chemstrand
Enka	Nylon 6 filament	American Enka
Golden Caprolan	Nylon 6 filament and staple used in carpets, industrial fabrics, etc.	Allied Chemical
IRC	Nylon 6 staple	Industrial Rayon
Lus-Trus	Monofilament yarn	Southern Lus-trus
Nyloft	Bulked carpet yarn	Industrial Rayon
Nylon 6	Condensation of e-amino caprolactam	Industrial Rayon
Nylon 66	Hexamethylene diamine and adipic acid base	Dupont; Chemstrand
Nylon 66 Types:		
105, 200, 305	Filament yarns	DuPont
280	Semi-dull filament yarn	DuPont
420	Staple fiber used to reinforce cotton and rayon	DuPont
501	Textured carpet yarn	DuPont
520	Filament carpet yarn	DuPont
700	An industrial type	DuPont
707	High breaking strength for rope and cordage	DuPont
Nylon Elastic	Copolymer of nylon 610	DuPont
Sparkling Nylon	Nylon 6 monofilament yarn with a triangular cross-section	DuPont

POLYESTER

Dacron	Polyester filament, tow and staple	DuPont
Types: 51, 52	High tenacity filament for industrial use	DuPont
54	Semi-dull tow and staple for apparel	DuPont
55, 56, 57	Medium tenacity filament for blouses, lingerie, marquisette, etc.	DuPont
61	Tow and staple with 45% shrinkage for industrial fabrics	DuPont
62	Filament yarn with excellent dyeing properties	DuPont
64	Staple stock for woolen and worsted blends	DuPont
Fiberfill	Fiber used as filling	DuPont
Fortrel	Polyester fiber, counterpart of Terylene	Celanese
Kodel	Polyester with unique molecular structure	Eastman
Mylar	Polyester film	DuPont
Vycron	Made from Goodyear polyester resin, "Vitel." Staple, tow and spun yarn	Beaunit Mills

Conditioning room at the Bemberg plant shows skein yarn on racks. Temperature and humidity are controlled

RAYON

Aristocrat	Cuprammonium filament, staple and tow	Beaunit Mills
Avicron	Crimped viscose filament and staple for blending and tufting	American Viscose
Avisco	Viscose—filament, staple, crimped, textured	American Viscose
Avisco Super L	Viscose carpet staple	American Viscose
Avisco XL	High tenacity staple	American Viscose
Avlin	Multi-cell viscose	American Viscose
Avril	Modified staple with high wet modulus	American Viscose
Avron	Viscose high strength staple	American Viscose
Belastra, Belastraw	Viscose—filament, staple	Hartford Fibres
Bemberg	Cuprammonium—filament, staple	Beaunit Mills
Briglo	Viscose—filament, bright	American Enka
Celanese	Viscose—filament, staple, tow	Celanese
Civona	Viscose—hollow filament	DuPont
Coloray	Viscose—solution-dyed filament	Courtaulds (Ala.)
Color-Sealed	Viscose filament, staple, tow	DuPont
Colorspun	Viscose—solution-dyed filament and/or yarn	American Viscose
Comiso	Viscose filament and tow, high tenacity	Beaunit Mills
Coosa Pines	Viscose—high tenacity and regular	Beaunit Mills
Cordura	Viscose—medium and high tenacity	DuPont
Corval	Cross-linked rayon	Courtaulds (Ala.)
Covinair, Covingtone	Viscose—medium and high tenacity	Industrial Rayon
Crinofil	Monofilament with straw-like effect	DuPont
Crystalon	Viscose-staple	Hartford Fibres
Cupioni	Cuprammonium—thick and thin, filament	Beaunit Mills
Cupracolor	Cuprammonium—solution-dyed filament	Beaunit Mills
Dream Slub	Cuprammonium—novelty torpedo slub	Beaunit Mills
Dull-fast, Dul-tone	Viscose—medium and high tenacity	Industrial Rayon
Dul-Tone	Dull viscose filament	Industrial Rayon
DuPont Rayon	Viscose—filament and staple	DuPont

DuPont #77-Plush	Viscose yarn for pile fabrics	DuPont
Dy-Lok	Viscose filament, staple	Industrial Rayon
Englo	Low luster rayon	American Enka
Enka Rayon, Enka Rayon Staple	Viscose—filament, staple	American Enka
Fiber D	Viscose-modified	DuPont
Fiber G	Viscose-modified	DuPont
Fiber E	Modified viscose which crinkles	DuPont
Fiber 500	Viscose—filament, for wash and wear	Beaunit Mills
Fibro	Viscose—staple fiber	Courtaulds (Ala.)
Flaikona	Cuprammonium—filament flake yarn	Beaunit Mills
Flake Slub	Cuprammonium — yarn with short entangled slubs	Beaunit Mills
Fortisan	Viscose—super-strong rayon	Celanese
Fortisan-36	Viscose—high denier, super-strong rayon	Celanese
Hartford	Viscose—staple	Hartford Fibres
Hi-Narco	Viscose—high tenacity	Beaunit Mills
Hygram	Viscose—filament, high tenacity	Celanese
IRC Rayon	Viscose—filament, medium and strong	Industrial Rayon
Jetspun	Viscose—solution-dyed filament	American Enka
Kolorbon, Kolorlok	Viscose—staple	Hartford Fibres
Lektroset	Viscose	Industrial Rayon
Long Type "A" Slub	Cuprammonium — filament, parallel non-entangled slubs	Beaunit Mills
Matesa	Cuprammonium — filament, delustered	Beaunit Mills
Measle Yarn	Cuprammonium—taut and loose filament	Beaunit Mills
Minifil	Filament viscose, heavy denier	American Viscose
Monofil #77	Flat cross-section monofilament or heavy denier viscose	DuPont
Multi-Strata Slub	Cuprammonium—torpedo slub filament	Beaunit Mills
Narco	Viscose—filament, medium	Beaunit Mills
Narcon	Viscose—strong staple fiber	Beaunit Mills
Newbray	Viscose—bright	New Bedford Rayon
Newdull	Viscose—dull	New Bedford Rayon
Newlow	Viscose—semi-dull	New Bedford Rayon
Nublite	Cuprammonium—filament, thick-and-thin	Beaunit Mills
Nupron	Viscose	Industrial Rayon
Ondelette	Viscose filament, random slubs	DuPont
Parfé	Cuprammonium—filament, spaced coloring	Beaunit Mills
Perlglo	Viscose—semi-dull	American Enka
Premier	Viscose—filament	Industrial Rayon
Rayflex	Viscose—filament, strong	American Viscose
Raysorb	Viscose rayon with absorptive properties	American Viscose
Semi-dull	Viscose—partially delustered	Beaunit Mills
Skenandoa	Viscose—filament	Beaunit Mills
Skyloft	Viscose—bulked filament for carpeting	American Enka

SM 27	Strong fiber rayon for wash and wear goods	Courtaulds (Ala.)
Spun-black	Viscose—filament solution-dyed	Industrial Rayon
Spun-Lo	Viscose—filament	Industrial Rayon
Strata-Slub	Cuprammonium—thick-and-thin filament	Beaunit Mills
Strawn	Viscose monofilament flat and straw-like	Industrial Rayon
Super Cordura	Viscose—high tenacity filament	DuPont
Super-Narco	Viscose—filament strong	Beaunit Mills
Super-Rayflex	Viscose—filament strong	American Viscose
Suprenka	Viscose—medium	American Enka
Superenka	Viscose—high tenacity	American Enka
Tempra	Viscose—high tenacity	American Enka
Thick-and-Thin	Viscose—filament, irregular diameter	DuPont
Tinselfil	Flat viscose filament, crystal-like luster	DuPont
Tinselon	Sparkling high-luster viscose filament	Industrial Rayon
Topel	Rayon—cross-linked	Courtaulds (Ala.)
Totarn	Viscose yarn with long, strong filaments	American Silk Mills
Tubize	Viscose—filament, bright and dull	Celanese
Tufton	Viscose—staple	American Viscose
Tyrex	Viscose — filament, high tenacity for tire cord	Tyrex
Tyron	Viscose—high tenacity	Industrial Rayon
Veri-Dull	Viscose—dull	Beaunit Mills
Viscalon	Viscose—staple	Hartford Fibres
Xtra-Dul	Viscose—filament, dull	Beaunit Mills
Zantrel	Polynosic with high, wet modulus	Hartford Fibres

RUBBER

Contro or Rolled Latex	A covered rubber yarn	Firestone
Darleen	Cut-rubber yarn for foundation garments	Darlington Fabrics
Filatex	Elastic yarn covered or uncovered	Filatex Corp.
Lactron	Extruded rubber thread	U.S. Rubber
Lastex	Elastic yarn	U.S. Rubber
Laton	Elastic yarn	U.S. Rubber
Revere	Cut rubber thread and rubber tension tape	U.S. Rubber

SARAN

Boltaflex	Vinylidene chloride monofilament	Bolta Products
Dawbarn	Monofilament yarn	Dawbarn Brothers
Lus-Trus	Monofilament yarn	Southern Lus-Trus
Rovana	Monofilament in form of flat film tape	Dow Chemical
Saran	Chlorine and ethylene combined to form vinylidene chloride. Made into copolymer with 10% vinyl chloride.	Dawbarn Brothers, General Tire & Rubber, Dow Chemical, National Plastic Products, Southern Lus-Trus, Polymers
Velon	Monofilament for transportation fabrics etc.	Firestone

SPANDEX

Lycra	Elastic filament yarn either covered or uncovered	DuPont
Vyrene	Stretch yarn	U.S. Rubber

TEXTURED YARNS

Aerocor	Air-bulked Fiberglas yarn	Owens-Corning
Agilon	Textured or stretch, curl-type, non-torque nylon	Deering Milliken
Ban-Lon	Textralized yarns.	Joseph Bancroft
Chadolon	Stretch torque nylon yarn	Chadbourn Gotham
Cumuloft	Filament carpet yarn of textured nylon	Chemstrand
Duclé	Bulk textured filament	Clarence L. Meyers
Fluflon	False-twist filament stretch yarns	Marionette Mills
Glacélon	A high stretch torque	Pilot Mfg.
Helanca	Regulation and false-twist textured yarns of nylon and Dacron	Heberlein
Helanca High Test	Maximum stretch Dacron and nylon yarns	Heberlein
Helanca NT	Torqueless nylon textured yarn with good stretch	Heberlein
Helanca SP	High elastic stretch yarns of nylon	Heberlein
Helanca SS	High bulk nylon yarn with controlled stretch	Heberlein
Helanca SW	False-twist nylon yarn for crepe or boucle	Heberlein
Livilon	Monofilament stretch	Chadbourn Gotham
Mylast	Crimp-type, non-torque thermoplastic yarn	Clarence L. Meyers
Saaba	False-twist, bulked stretch yarn	Leesona Corp.
Spunize	Thermoplastic crimped textured yarn	Spunize Co.
Superloft	Thermoplastic fibers which have false-twist in the stretch yarns	Leesona Corp.
Taslan	Air-bulking treatment for novelty yarns	DuPont
Textralized	Crimped, bulked, non-torque thermoplastic	Joseph Bancroft
Tycora	Continuous filaments modified for end uses	Textured Yarn Co.

TEXTURED YARN PROCESSORS:

Duplan Corp., Hemmerich Corp., Leon-Ferenbach, Madison Throwing Co., Inc.

VINAL

Vinal	Polyvinyl alcohol fiber; in monofilament and multifilament forms, staple.	Air Reduction Chemical

VINYON

Avisco Vinyon HH	Copolymer of vinyl chloride and vinyl acetate, dissolved in acetone	American Viscose
Bristand	Polyvinyl chloride-polyvinyl acetate filament used in brushes.	Polymers, Inc.

FOREIGN COUNTRIES

ACETATE AND RAYON

Alastra	Viscose, filament	Fabelta, Belgium
Albene	Acetate, dull	Rhodiaceta, France
Albula	Viscose filament, dull	Snia Viscosa, Italy
Amplum	Viscose	Algemene Kunstzijde, Unie, Netherlands
Argentea	Viscose filament	Snia Viscosa, Italy
Arma Flisca	Viscose, high tenacity	Société de la Viscose, France
Arma Flisca-Dull	Viscose, high tenacity, dull	Société de la Viscose, France
Arma Lamo	Viscose, high tenacity	Société de la Viscose, France
Belimat	Viscose filament, dull	Fabelta, Brussels, Belgium
Bemberg	Cuprammonium rayon, filament	British Bemberg, Ltd., Doncaster, England
Bobina	Viscose—bristle, hair, and thread	Kunstseidefabrik, Bobingen, Germany
Bobol	Viscose staple	Snia Viscosa, Italy
Breda	All-inclusive trademark for this company	Hollandsche Kunstzijde, Netherlands
Bredanese	Viscose, semi-dull	Hollandsche Kunstzijde
Britbem	Cuprammonium rayon, filament form	British Bemberg, Ltd., England
Cantona	Viscose, semi-dull	Algemene Kunstzijde, Netherlands
Celafibre	Acetate staple	British Celanese, Ltd., Spondon, England
Celafil	Acetate, ruptured-filament type yarn	British Celanese, Ltd.
Celanese	Acetate filament	British Celanese, Ltd.
Cheviot	Viscose filament	North British Rayon, Ltd., Scotland
Chinsang	Viscose multifilament	Hollandsche Kunstzijde
Cisalfa	Viscose staple, animalized with 10% protein	Snia Viscosa, Italy
Conyma	Viscose, bright filament	Nyma Rayon Works Holland
Conymex	Viscose, bright filament	Nyma Rayon Works
Cordenka	Viscose	Algemene Kunstzijde Unie, Netherlands
Cordulla	Viscose, dull	Courtaulds, Ltd., London
Courtaulds	Viscose staple	Courtaulds, Ltd., London
Crinol	Viscose filament	Snia Viscosa, Italy
Crispella	Viscose	Hollandsche Kunstzijde
Croneka	Viscose	Algemene Kunstzijde Unie, Holland
C.S. Yarn	Viscose filament	Harbens, Ltd., Colborne, England
Cuprama	Cuprammonium filament	Farbenfabriken Bayer, Germany
Cupresa	Cuprammonium rayon	Farbenfabriken Bayer, Germany

Delustra	Viscose, dull	Courtaulds, Ltd., London
Emera	Viscose, high twist	Hollandsche Kunstzijde
Enka	All-inclusive trademark	Algemene Kunstzijde, Netherlands
Extrema	Viscose, dull	Hollandsche Kunstzijde
Fabelmat	Viscose filament, dull	Fabelta, Belgium
Fibrelta	Viscose	Fabelta, Belgium
Fibramine	Viscose	Fabelta,. Belgium
Fibrenka	Viscose	Algemene Kunstzijde, Netherlands
Fibro	Viscose staple	Courtaulds, Ltd., Cornwall, Canada
Fibro	Viscose staple	Courtaulds, Ltd., London
Fibroceta	Acetate staple	Courtaulds, Ltd., London
Fibrolane	Viscose staple with special dyeing properties	Courtaulds, Ltd., London
Flatessa	Viscose, semi-dull	Hollandsche Kunstzijde
Flimba	Viscose, high tenacity and crimped	Société de la Viscose Suisse, Switzerland
Flisca	Viscose	Société de la Viscose Suisse
Flox	Viscose staple	Spinfasser A.G. Elberfeld, Germany
Glanzstoff	Viscose filament	Vereinigte Glanzstoff-Fabriken, Germany
High 10	Viscose filament, high tenacity	Fabelta, Brussels, Belgium
Ivorea	Viscose filament, dull	Snia Viscosa, Italy
Jedmat	Viscose filament	North British Rayon Scotland
Jedpak	Viscose filament for crepes	North British Rayon
Kasilga	Viscose filament	Kunstsilkefabrikken, Notodden, Norway
Kirksyl	Viscose yarn and viscose crepe yarn	Kirklees, Ltd., Bury, Lancashire, England
Lacisana	Viscose staple	Snia Viscosa, Italy
Lamita	Viscose	Société de la Viscose, Albi, France
Lamo	Viscose	Société de la Viscose, France
Lansil	Acetate	Lansil, Ltd., England
Lanusa	Viscose	Badische Anilin & Soda Fabrik, Germany
Lucisa	Viscose filament	Snia Viscosa, Italy
Matenka	Viscose, dull	Algemene Kunstzijde, Netherlands
Matenkanese	Viscose multifilament	Algemene Kunstzijde, Netherlands
Matenkona	Viscose, dull	Algemene Kunstzijde, Netherlands
Matesa	Cuprammonium rayon filament, delustered	British Bemberg, Ltd., England
Mattesco	Viscose filament dulled by titanium	Courtaulds, Ltd., Ontario, Canada
Neoplex	Viscose, dull	Harbens, Ltd., Colborne, England
Nerane	Acetate, dyed fast black	Société Rhodiaceta, Lyon-Vaise, France
Nobricella	Viscose, semi-dull	Hollandsche Kunstzijde
Nyma, Nymella, and Nymex	Viscose filaments	Nyma Rayon Works
Nymata, Nyatco, and Nymellamat	Viscose filaments, dull	Nyma Rayon Works
Nymcord	Viscose filament for industrial purposes	Nyma Rayon Works
Oceane	Acetate, dyed fast black	Société Rhodiaceta
Opaceta	Acetate, dull	Courtaulds, Ltd.
Paramount	Viscose filament	North British Rayon

Phrix	Viscose	Phrix, Ges. m.p. H., Germany
Rayolanda	Viscose rayon staple	Courtaulds, Ltd.
Rhodia	Acetate	Société Rhodiaceta, Lyon-Vaise, France
Sava	Viscose filament	Fabelta, Belgium
Scaldyna	Viscose, high tenacity	Fabelta, Belgium
Seraceta	Acetate	Courtaulds, Ltd.
Setilmat	Acetate filament, dull	Fabelta, Belgium
Setilose	Acetate filament	Fabelta, Belgium
Setina	Acetate	Fabelta, Belgium
Spunenka	Viscose	Algemene Kunstzijde Unie, Netherlands
Standard	Viscose	North British Rayon
Summum, Superarnum	Viscose	Algemene Kunstzijde Unie, Netherlands
Super Breda	Viscose	Hollandsche Kunstzijde
Supral	Viscose staple	Atkieselskapet Borregaard, Norway
Suprasta	Viscose filament, high tenacity	Fabelta, Belgium
Swina	Viscose	Fabelta, Belgium
Tenasco	Viscose, high tenacity	Courtaulds, Ltd.
Tenax	Viscose, high tenacity	Algemene Kunstzijde Unie, Netherlands
Tubastra	Viscose filament	Fabelta, Belgium
Tudenza	Viscose filament	Courtaulds, Ltd.
Ultrenka	Viscose multifilament	Algemene Kunstzijde Unie, Netherlands
Viscol	Viscose	Snia Viscosa, Italy
Viscose	Viscose	Svenska Rayon, Aktiebolaget, Sweden
Viscocord	Viscose, high tenacity	Courtaulds, Ltd. Ontario, Canada

OTHER LEADING PRODUCERS OF RAYON AND ACETATE:

In Europe: Acetat-Kontor; Chatillon S. A.; Cie. Artificiels & Synthetiques Industrielle de Textiles; Fabrica de Seda Artificial de Valdenoced; Farbwerke Hoechst Ag.; Feldmühle Ag.; J. P. Bemberg Ag.; Lonzona Gmbh.; Soc. Lyonnaise de Textile; Spinnfaser Ag.; Suddeutsche Zellwolle Ag.; Vereinigte Glanzstoff-Fabriken Ag.; Wacker-Chemie Gmbh.

In the Far East: Asahi Chemical Industries Co. Ltd.; Dai Nippon Celluloid Co. Ltd.; Kanegafuchi Spinning Co. Ltd.; Kurashiki Rayon Co. Ltd.; Mitsubishi Rayon Co. Ltd.; Nippon Rayon Co. Ltd.; Shin Nippon Chisso Hiryo K. K.; Teikoku Rayon Co. Ltd.; Tokyo Jinzo K. K.; Toyo Rayon Co. Ltd.

GLASS

OTHER LEADING PRODUCERS OF GLASS FIBERS:

Is Europe: Aachen Gerresheimer Textilglas; Ferro Enamels N. V.; Fibreglas Ltd.; Fibres de Verre S. A.; Glasfaser-Erzeugnisse; N. V. Verenigte Glasfabriken; S. A. Isoverbel; Soc. du Verre Textile; Vetreria Italiana Balzaretti Modigliani S. A.

In the Far East: Asahi Garasu KK; Nitto Boseki KK; Tokai Tokushu Garasu KK

POLYACRYLONITRILE

Crylor	Filament and staple	France
Dolan	Tow and staple	Germany
Dralon	Staple	Germany
Nitrilon	Filament and staple	Russia
PAN-endlos-Faser	Filament and staple	Germany
Redon	Staple	France, Germany

OTHER LEADING PRODUCERS OF POLYACRYLONITRILE (ACRYLIC):

In Europe: Courtaulds Ltd.; Fabelta S. A.; Farbenfabriken Bayer Ag.; N. V. Kunstzijde Spinneij Nyma; Phrix-Werke Ag.; Rhodiaceta S. A.; Societa ACSA; Stockholms Soperfosfat Fabrik; Suddeutsche Zellewolle Ag.

In the Far East: Asahi Chemical Industries Co. Ltd.; Kanegafuchi Spinning Co. Ltd.; Shinko Acril. Co. Ltd.; Toyo Spinning Co.

POLYAMIDE

Amilan	Filament and staple	Japan
Bayer-Perlon	Filament	Germany

Bayer-Perlon-Borsten	Monofilament and ribbon	Germany
Bayer-Perlon-Faser	Staple	Germany
Bobina-Perlon	Filament	Germany
Bobina-Perlon-Borsten	Monofilament and ribbon	Germany
Bobina-Perlon-Draht	Monofilament	Germany
Bobina-Perlon-Faser	Staple, pre-dyed	Germany
Ducilo Nylon	Filament and staple	Argentina
Enkalon	Filament	Netherlands
Frilon	Staple	Spain
Grilon and Grilon-Faser	Filament, staple, and monofilament	Germany
Kapron	Filament	Russia
Lilion	Filament	Italy
Nailon	Filament	Italy
Niplon	Filament	Japan
Perlon	Staple	Germany
Perlon-Borsten	Monofilament	Germany
Perlon-Cordseide	Filament	Germany
Perlonseide	Filament	Germany
Phrix-Perlon	Filament, staple, ribbon	Germany
Rhodia-Nylon	Filament	Germany
Rilsan	Monofilament	France
Sanderit-Faden	Monofilament and ribbon	Germany
Steelon	Filament and monofilament	Poland
Supron-Band	Ribbon	Germany
VGF-Perlon-Faser	Filament and staple	Germany

OTHER LEADING PRODUCERS OF POLYAMIDE:

In Europe: A. K. U. Algemene Kunstzijde Unie N. V.; Bombrini Parodi-Delfino S. A.; British Nylon Spinners Ltd.; Chatillon S. A.; Courtaulds Ltd.; Fabelta S. A.; Farbenfabriken Bayer A. G.; Farbwerke Hoechst A. G.; Imperial Chemical Industries Ltd.; Industrial Quimicas Textiles S. A.; Niederer & Company; Perlofil S. A.; SNIA Viscosa; Textilfabrik Buchele; Viscose Suisse; Vereinigte Glanzstoff-Fabriken A. G.

In the Far East: Nippon Rayon Co. Ltd.; Toyo Rayon Co. Ltd.

POLYESTER

Enkalene	Staple	Germany
Tergal	Staple	France
Terital	Staple	Italy
Terylene	Filament	England
Terylene Staple Fiber	Staple	England

OTHER LEADING PRODUCERS OF POLYESTER:

In Europe: A. K. U. Algemene Kunstzijde Unie N. V.; Farbwerke Hoechst A. G.; Imperial Chemical Industries Ltd.; Rhodiaceta S. A.; Vereinigte Glanzstoff-Fabriken A. G.

In the Far East: Kawasaki Chemical Industry Co. Ltd.; Teikoku Rayon Co. Ltd.; Toyo Rayon Co. Ltd.

POLYETHYLENE

Courlene	Filament	England
Northylen	Monofilament	Germany
Polyethylene	Monofilament	Belgium
Polythene	Monofilament	England

OTHER LEADING PRODUCERS OF POLYETHYLENE:

In Europe: Bolta-Werk A. G.; BX Plastics Ltd.; Chemische Werk Huls; Courtaulds Ltd.; Deutsche Rhodiaceta A. G.; Imperial Chemical Industries; International Galalith Gmbh.; Montecatini Soc. Gen.; N. V. Hollandsche Draaden Kabelfabriek; N. V. Kunstzijde Spinnerij NYMA; SNIA Viscosa; Soc. Rhovyl S. A.; Wacker-Chemi A. G.

In the Far East: Asahi-Dow Ltd.; Dai Nippon Spinning Co.; Japanese Synthetic Fiber Co. Ltd.; Kanegafuchi Spinning Co. Ltd.; Kurashiki Rayon Co. Ltd.; Kureha Kasei Co. Ltd.; Shinko Rayon Co. Ltd.; Teikoku Jinzo Kenshi Co. Ltd.

POLYPROPYLENE

Meraklon	Filament and staple	Italy

POLYSTYRENE

Styroflex-Faden	Monofilament	Germany

POLYURETHANE

Perlon-U	Filament and staple	Germany
Perlon-U-Borsten	Monofilament	Germany

POLYVINYL ALCOHOL

Cremona	Filament and staple	Japan
Kanebiyan	Filament and staple	Japan
Kuralon	Filament and staple	Japan
Newlon	Filament and staple	Japan
Synthofil	Monofilament	Germany
Vinylan	Filament and staple	Japan
Woolon	Filament and staple	Japan

POLYVINYL CHLORIDE

Bayer Pe-Ce-U-Borsten	Monofilament	Germany
Chlorin	Filament	Russia
Fibrovyl	Staple	France
Isovyl	Staple	France, Germany
Kurehalon	Monofilament	Japan
Movil	Staple	Italy
Rhovyl	Staple	France, Germany
Rhovyl-Fibra	Staple	Germany
Rhovyl-Thermo	Staple	France, Germany
Pe-Ce-Faser	Staple	Germany
Pe-Ce-Kunstseide-Faser	Staple	Germany
PCU-Faser	Staple	Germany
Pe-Ce-U-Flach-Runddraht	Staple	Germany
Thermovyl	Staple	France, Germany

POLYVINYLIDENE CHLORIDE

Bexan	Monofilament	England
Bolta-Saran	Monofilament	Germany
Draka-Saran	Monofilament	Netherlands
Kurehalon	Monofilament	Japan
Pe-Ce-120	Filament	Germany
Pe-Ce-120-Borsten	Monofilament	Germany

PROTEIN FIBERS

Alignate	Calcium-alginate, staple	Courtaulds, Ltd.
Casein	Casein	Fabelta, Belgium
Courtaulds Standard	Alginate	Courtaulds, Ltd.
Enkasa	Casein	Algemene Kunstzijde, Netherlands
Fibrolane—A, B, C, BC, and BX	Casein, staple	Courtaulds, Ltd.
Lanital, Lanital S	Casein, staple	Les Textiles Nouveaux; Le Lanital Belge, Anvaing, Belgian Frasne-Buiznol
Melkwol, Merinova	Casein, staple	Snia Viscosa, Italy
Silkool, Silkoon, Silkwool	Soybean	Shawa Sangyo Kaisha, Japan

OTHER LEADING PRODUCERS OF PROTEIN FIBERS:

In Europe: Carl Fredenberg A. G.

In the Far East: Fuji Spinning Co. Ltd.; Kanegafuchi Spinning Co. Ltd.

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